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In the Supreme Court of the United States

OCTOBER TERM, 1977

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UNITED STATES OF AMERICA, PETITIONER

v.

STEPHEN PITCAIRN, Agent for Shareholders of
Autogiro Company of America

**PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF CLAIMS**

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**PETITION FOR A WRIT OF CERTIORARI TO THE
UNITED STATES COURT OF CLAIMS**

The Solicitor General, on behalf of the United States of America, petitions for a writ of certiorari to review the judgment of the United States Court of Claims in this case.

OPINIONS BELOW

The opinion of the trial judge of the Court of Claims (App. A, *infra*, pp. 1a-31a) is not officially reported. The opinion of the Court of Claims (App. B, *infra*, pp. 32a-108a), as amended on rehearing (App. C, *infra*, pp. 109a-112a), is reported at 547 F.2d 1106.¹

¹ We have not reproduced the trial judge's findings of fact or his two opinions on remand concerning the computation of the damages because they do not bear upon the questions

JURISDICTION

The Court of Claims announced its opinion with respect to the questions presented here on December 15, 1976, and, except for amendments to its original opinion, denied both parties' motions for rehearing on March 4, 1977 (App. C, *infra*, pp. 109a-112a). The final judgment of the Court of Claims was entered on July 12, 1977 (App. D, *infra*, pp. 113a-115a). By order dated October 6, 1977, the Chief Justice extended the time for filing a petition for a writ of certiorari to and including November 9, 1977, without prejudice to the Court's consideration of whether the application was timely filed. The jurisdiction of this Court is invoked under 28 U.S.C. 1255(1).

QUESTIONS PRESENTED

This case raises two interrelated questions concerning the determination of "reasonable and entire compensation" due to a patent holder as a result of the government's use of his patents under 28 U.S.C. 1498(a):

1. Whether such compensation may be measured solely by licensing offers that were not accepted and by a licensing agreement's royalty provision that was never implemented.

2. Whether amounts actually paid under a licensing agreement (and, inferentially, the patent holder's low rejected sales offers) may be disregarded on the

presented. However, for the convenience of the Court, we have lodged with the Clerk copies of the trial judge's findings and of the opinions on remand.

theory that the government's ability to use the patented invention without a license, subject to later payment of statutory compensation, placed the patent holder in a weak bargaining position vis-a-vis potential nongovernmental licensees or purchasers.

STATUTE INVOLVED

28 U.S.C. 1498(a) provides in pertinent part:

Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture.

For the purposes of this section, the use or manufacture of an invention described in and covered by a patent of the United States by a contractor, a subcontractor, or any person, firm, or corporation for the Government and with the authorization or consent of the Government, shall be construed as use or manufacture for the United States.

STATEMENT

Respondent is an agent for the former shareholders of Autogiro Company of America.² In *Autogiro*

² Autogiro Company of America was liquidated in 1973 and all of its assets, including the claims against the government that are the subject of this case, were transferred to its shareholders (App. B, *infra*, p. 34a). We therefore use the term "respondent" to refer interchangeably to the agent and to the corporation.

Company of America v. United States, 384 F.2d 391, the Court of Claims upheld the validity of 59 patent claims respecting 11 patents owned by respondents covering various inventions pertaining to autogiros or helicopters. The court further held that the government had infringed certain of these patents as a result of the manufacture of seven helicopter models by contractors on behalf of the government (App. B, *infra*, p. 34a).

The present phase of the litigation involves the computation of the "reasonable and entire compensation" due to respondent under 28 U.S.C. 1498(a). The recovery period runs from November 1946, when the government first infringed one of the patents, until May 1964, when the last patent expired (App. B, *infra*, p. 43a).

1. Effective January 1, 1947, respondent entered into a licensing agreement with United Aircraft Corporation, the largest helicopter manufacturer at that time. The agreement called for payment to respondent of a royalty of \$500 per aircraft for the period ending December 31, 1948,³ with the royalty to change to two percent of the total retail sales price as of January 1, 1949. The agreement could be terminated at any time after December 31, 1948, upon six months' written notice (App. B, *infra*, pp. 45a-46a and n. 7; Tr. 8614; see also App. B,

³ The agreement provided that for the period before 1949 the minimum annual royalty would be \$10,000 (App. B, *infra*, pp. 53a-54a n. 16).

infra, p. 97a). After the United agreement was executed, respondent proposed similar licenses to the other major manufacturers of helicopters. However, these companies refused to take licenses from respondent (App. B, *infra*, p. 46a).

In 1948, United expressed its unwillingness to permit the two percent rate to become effective and its intent to cancel the agreement as of January 1, 1949. United advised respondent, however, that it would be willing to accept a paid-up license for \$325,000, less royalties previously paid. Respondent and United thereupon commenced several months of negotiations, in which respondent proposed that United purchase the patents outright for \$750,000 (App. B, *infra*, p. 46a; Def. Ex. 17-3, pp. 7-10; Def. Exs. 19-8, 19-9, 19-10, 19-11 (offers of proof)).⁴ Ultimately, respondent accepted United's offer to accept a fully paid-up license for \$325,000. Toward this purchase price, United received a credit for the \$204,261.26 in royalties it already had paid. Thus, in January 1949, United paid respondent the difference of \$120,738.74 for the paid-up license (App. B, *infra*, pp. 95a-96a; Def. Ex. 17-6). The 1947 and 1949 United licenses were the only ones actually granted by re-

⁴ Respondent did not challenge the authenticity of the documents supporting the existence of its offer to sell the patents and did not deny that the evidence established that it made such an offer (see App. B, *infra*, p. 95a). However, over the government's objection, the trial judge excluded such evidence on the ground that respondent's offer was not evidence of the value of the patents (see Tr. 8121-8124).

spondent from November 1946 until expiration of the last patent in May 1964 (App. B, *infra*, p. 46a).

At trial, the government's chief witness was Lawrence Glassman, who had extensive experience in the field of patents.⁵ In determining the "reasonable and entire compensation" due respondent, Glassman computed the actual and projected sales of licensed helicopters by United for the recovery period to be \$141,801,852. The total royalties paid by United to respondent for this period under the two license agreements was \$184,238.74. Glassman then divided the amount of royalties by the projected and actual sales to arrive at a royalty rate of 0.1299 percent. Since the government's total helicopter procurement during the recovery period was \$639,243,969, Glassman concluded that respondent was entitled to royalty compensation of \$830,377.92 (\$639,243,969 x .001299) (App. B, *infra*, pp. 102a-106a n. 3).

2. The trial judge rejected the relevance of the two operative United license agreements in determining the "reasonable and entire compensation" due respondent. In his view, these negotiated agreements were not material because they were concluded after the date upon which the infringement began (App. A, *infra*, p. 15a). Pursuant to the trial judge's analysis, the initial infringement was a taking of respondent's

⁵ After working as a Patent Examiner for four years, Glassman performed patent work for the Army Material Command, including the negotiation of license agreements and settlement of infringement claims (App. B, *infra*, pp. 101a-102a).

ent's entire property (App. B, *infra*, p. 43a). He thereafter concluded that the appropriate measure of royalty compensation was \$24,570,525, i.e., approximately 3.85 percent of the total procurement cost of \$639,243,969 (App. A, *infra*, p. 16a).

3. In a *per curiam* opinion, the Court of Claims upheld the compensation award to the extent of \$14,440,772 (App. B, *infra*, pp. 32a-72a; App. D, *infra*, p. 114a). The court held that the trial judge was wrong in failing to consider the 1947 licensing agreement between respondent and United in fixing the compensation due respondent. As the court explained, the fact that this agreement was entered into after the date of the first infringement did not detract from its evidentiary value in computing the compensation, since the infringements occurred continuously throughout the recovery period from November 1946 to May 1964 (App. B, *infra*, pp. 42a-43a).⁶

The court based its \$14,440,772 compensation award on the two percent royalty provision of the 1947 licensing agreement. Although the court acknowledged that no royalties were ever paid at two

⁶ The court's *per curiam* opinion was joined by only three judges—Chief Judge Cowen and Judges Davis and Skelton (App. B, *infra*, p. 40a n. 3). Judges Nichols and Kunzig concurred in the result (*ibid.*). In their view, "the Royalty Compensation should be at least as much as the conclusions stated in * * * [the *per curiam* opinion] * * * and, indeed, considerably larger yet" (App. B, *infra*, p. 72a). They would have awarded \$20 million in royalty compensation (App. B, *infra*, p. 77a).

percent because that rate never became effective, it concluded that the two percent figure was "highly probative" (App. B, *infra*, p. 49a) of the value of the patents because "[respondent] proposed similar licenses to other major manufacturers of helicopters, in effect announcing its post-war rate to be 2%" (App. B, *infra*, p. 46a). In the court's view, the refusal of the aircraft companies to enter into license agreements with respondent on a two percent basis was outweighed by the "significant fact * * * that * * * [respondent] made the offer and made it widely" (App. B, *infra*, p. 46a). The court rejected the relevance of the subsequent paid-up license agreement as an indicium of value, because it viewed that agreement as the product of "one-sided litigation pressure" by United upon respondent (App. B, *infra*, p. 52a). Accordingly, it ruled that "the 2% rate should be accepted for all infringements" (App. B, *infra*, p. 51a).⁷

Judges Kashiwa and Bennett dissented (App. B, *infra*, pp. 83a-108a). They would have limited respondent's royalty compensation to \$830,377.92, in accordance with the analysis of the government's expert. In their view, respondent's two percent arrangement with United was not a reliable gauge of the patents' market value because no royalties were ever paid under that agreement. Since the two percent

⁷ For the period prior to January 1, 1949, the court applied the \$500 per aircraft royalty and the \$10,000 minimum annual royalty of the 1947 agreement. From January 1, 1949, it applied the two percent rate (App. B, *infra*, pp. 53a-54a n. 16).

formula was superseded by a paid-up license, the dissenting judges concluded that the lower rate of that paid-up license placed a ceiling on the amount of respondent's recovery. As Judge Kashiwa stated, "To view the case otherwise is simply to ignore the market value which * * * [respondent] itself placed on a license under its patents" (App. B, *infra*, p. 97a).⁸

⁸ After the Court of Claims announced its opinion on December 15, 1976, both parties filed timely motions for rehearing. Pursuant to these motions, the court modified its opinion on March 4, 1977, in two important respects. At respondent's request, it enlarged the procurement base from total airframe price to total retail sales value so as to include helicopter engines and standard equipment in the procurement base. At the government's request, it clarified respondent's inability to claim \$1.6 million of attorneys' fees, witness' fees, and expenses (App. C, *infra*, pp. 109a-112a; see also App. B, *infra*, pp. 60a-61a). As provided in the court's original opinion, the case was remanded to the trial judge for computation of the amount of the recovery (App. C, *infra*, p. 101a).

In a memorandum opinion of March 30, 1977, the trial judge held that the retail sales value against which the royalty rate was to be applied should be increased 40 percent to take into account the value of the engines and standard equipment. The government excepted to this decision. On June 21, 1977, the Court of Claims held that the trial judge's 40 percent increase was wrong and that the proper increase was 10 percent in accordance with the government's submission. On June 24, 1977, the trial judge entered a second memorandum opinion setting forth a proposed judgment. The government further excepted to the trial judge's second opinion on the ground that the two percent royalty rate did not apply to some of the procurement. On July 12, 1977, the Court of Claims rejected the government's second exception and entered final judgment (App. D, *infra*, pp. 113a-115a).

REASONS FOR GRANTING THE WRIT

In awarding respondent \$14.4 million—the largest judgment ever rendered in favor of a patent holder under 28 U.S.C. 1498(a)—the Court of Claims departed from the longstanding rule, well established by prior decisions of this Court, that unaccepted offers and other indicia that have not met the test of the marketplace may not be used as affirmative evidence of the value of property taken or used by the government. The Court of Claims held that the value of the patents at issue here was not less than the value placed upon them by respondent's rejected licensing offers and by the royalty provision of a licensing agreement that never became effective and under which no royalties were ever paid. In so ruling, the court rejected, on grounds that will be present in almost every action under 28 U.S.C. 1498(a), the value of the patents established by a licensing agreement that did become effective, and it ignored the fact that respondent had unsuccessfully attempted to sell its entire rights in the patents for approximately five percent of the value the court placed upon the government's mere nonexclusive use of the patented inventions.

The decision below threatens to increase drastically the amounts of judgments against the government in patent infringement and cognate eminent domain suits. Its logic will permit claimants to prove value on the basis of unaccepted offers and unimplemented contracts, and will require substantial discounting of the evidence afforded by arm's length agreements

between nongovernmental parties. In particular, the holding below exposes the government to respondent's claims for almost \$100 million in additional compensation arising out of similar facts.

Since the Court of Claims is the only forum empowered to hear patent infringement suits against the government under 28 U.S.C. 1498(a), no square conflict of decisions will ever arise among the lower federal courts. This Court therefore should review this case in order to reaffirm the prior settled understanding that the proper measure of damages in such cases is established by operative licensing agreements to which the patent holder is a party, and thereby to assure that the government is not required substantially to overpay for its lawful use of patented inventions.

1. The use or manufacture by or for the government of a device or machine embodying any invention protected by a United States patent is a taking of property under its power of eminent domain. The nature of the property taken is a license in the patent, which continues throughout the life of the patent or the period of the infringing procurement, whichever is shorter. Thus, the appropriate measure of damages in a suit by a patent holder against the government under 28 U.S.C. 1498(a) for "reasonable and entire compensation" is the royalties that would have been payable under a comparable license of the patent, so as "to accomplish complete justice as between the plaintiff and the United States." *Waite v. United States*, 282 U.S. 508, 509. See also *Crozier v. Krupp*,

224 U.S. 290, 305-308; *Calhoun v. United States*, 453 F.2d 1385, 1391 (Ct. Cl.); *Irving Air Chute Co. v. United States*, 93 F. Supp. 633 (Ct. Cl.).

Here, the recovery period ran from November 1946 to May 1964. During that period, respondent received royalties under two different licensing agreements with United Aircraft Corporation. Under the first agreement, effective as of January 1, 1947, United paid respondent a royalty of \$500 per aircraft manufactured to and including December 31, 1948. Although the parties had provided in that agreement for a two percent royalty from and after January 1, 1949, that provision was subject to termination upon prior notice; United never permitted the provision to go into effect but instead obtained a paid-up license from respondent for a net price of approximately \$120,000, which was equivalent to a royalty rate of 0.1299 percent. The two percent royalty provision thus was akin to an option that United chose not to exercise.

In fixing the compensation award on the basis of the unimplemented royalty provision of the 1947 agreement, the Court of Claims relied upon the fact that respondent "proposed similar licenses to other major manufacturers of helicopters, in effect announcing its post-war rate to be 2%" (App. B, *infra*, p. 46a). The court further observed, "These companies all refused to take licenses but the significant fact is that * * * [respondent] made the offer and made it widely" (*ibid.*).

It requires little citation of authority to demonstrate the error of the court's reasoning. If the government exercises its power of eminent domain to take property having a fair market value of \$1,000, the fact that the owner, anticipating that he will be compensated for the taking, has offered the property for sale widely at \$1 million must have no significance if no one is willing to pay such a price.⁹ A determination of the market value of property taken or used by the government cannot rest upon unaccepted offers or unexercised options. See *Sharp v. United States*, 191 U.S. 341, 349.

Moreover, the decision below conflicts with the rule established by this Court almost a century ago in *Rude v. Westcott*, 130 U.S. 152, 165, that "[i]n order that a royalty may be accepted as a measure of damages against an infringer, who is a stranger to the license establishing it, * * * it must be paid by such a number of persons as to indicate a general acquiescence in its reasonableness by those who have occasion to use the invention * * *." Under this test, respondent's mere offers of a two percent royalty for its patents are irrelevant to the measure of its "reasonable and entire compensation," since the entire industry refused to accept such a licensing agreement. Indeed,

⁹ In most cases, of course, an owner's rejected sale offer indicates the maximum value that may be attributed to the property and thereby serves to place a ceiling upon permissible compensation. Here, respondent offered to sell the patents for \$750,000, a price that should have set an approximate ceiling on the compensation payable for their use. See pp. 14-16, *infra*.

United, which had secured the option of licensing at such a royalty rate from and after January 1, 1949, chose not to exercise that option and terminated its licensing agreement before that royalty provision became effective. Since the two percent royalty provision never became effective, and no one ever paid respondent that royalty during the recovery period, the presence of that provision in the contract with United is no more probative of value than are respondent's many unaccepted offers.

2. The Court of Claims further erred in rejecting the implemented paid-up licensing agreement between respondent and United as the proper measure of compensation. Apart from the 1947 agreement, which provided for a royalty of \$500 per aircraft for the period ending December 31, 1948, the only operative licensing agreement to which respondent was a party during the recovery period was the paid-up license it granted United for approximately \$120,000. Since respondent gave United a license covering all of the patents in issue for only \$120,000, and had been willing to sell the patents outright for \$750,000 (see App. B, *infra*, p. 95a), the \$14.4 million judgment awarded by the court bears no reasonable relationship to the actual market value of the government's use of the patented invention through procurement from unlicensed manufacturers.

The court attempted to dismiss the probative value of the paid-up license agreement (and, inferentially, of respondent's offer to sell) by characterizing it as a product of United's "strong insistence" and "one-sided litigation pressure" and respondent's "hobbled posi-

tion" (App. B, *infra*, p. 52a). In the court's view, respondent's "situation was unusual in that the Government was the dominant consumer of the articles embodying the patents, and this put * * * [respondent] to a disadvantage since it was very unlikely that an injunction could be obtained against United (or other infringers)" (App. B, *infra*, p. 51a).

But the government's position as the dominant consumer, and the fact that, with respect to sales to the government by unlicensed manufacturers, respondent was limited to the remedy of an action for compensation under 28 U.S.C. 1498, do not justify the court's conclusion that respondent was placed in a weakened bargaining position. Actually, the opposite conclusion is required. That the government is the dominant user of a patented invention and may use it without a license actually strengthens a patent holder's hand in dealing with potential licensees. In such circumstances, the patent holder knows that being a hard-nosed bargainer entails little risk that refusal of his offer will result in nonuse of the patent; the patent will be used, and he will receive "reasonable and entire compensation," even if he refuses to grant a license. Such a patent holder therefore has little to lose from holding out for the last dollar in his negotiations with potential licensees, especially since he knows that the price established by such negotiations may govern the measurement of compensation payable by the government.¹⁰ In this case, the basis for

¹⁰ Indeed, the Court of Claims itself implicitly recognized these considerations when it noted, in connection with the earlier agreement between respondent and United, "The rec-

the reduced price established by the 1949 agreement was both parties' realization that the value of the patents was declining (see App. B, *infra*, pp. 48a and 49a n. 11), not any "hobbled position" in which respondent found itself.

3. The decision below invites claimants in patent infringement and eminent domain suits against the government to introduce self-serving evidence of unaccepted offers and unimplemented contracts as proof of value. The potential for abuse is obvious. Unaccepted offers, as this Court observed in *Sharp v. United States*, *supra*, 191 U.S. at 349, "do not tend to show value, and they are unsatisfactory, easy of fabrication and even dangerous in their character as evidence upon this subject." Moreover, in a very high proportion of cases under 28 U.S.C. 1498(a), the government will be a dominant or substantial user of the patented invention at issue, thus triggering the court's disregard for actual market value as established in arm's length bargaining between the patent holders and third persons.

The decision in this case therefore augurs vastly larger judgments in patent compensation actions. Indeed, in two other infringement actions, brought by respondent involving other helicopter patents, respondent

does not show that the 1947 United License was a one-sided effort by United to force * * * [respondent] to compromise its true position or face years of grinding litigation in this court under 28 U.S.C. § 1498" (App. B, *infra*, p. 47a). Nothing occurred between 1947 and 1949 to alter the essential bargaining positions of respondent and United as willing seller and buyer.

ent has asserted the unused two percent royalty rate approved by the decision below as *res judicata* in support of its further claims with respect to a potential procurement base of \$4.5 billion. *Pitcairn v. United States*, Nos. 22-60 and 188-63. If the patents in those cases are found to be valid and infringed, the two percent rate will result in an award of \$90 million, excluding delay compensation. The immediate impact of the decision below upon the government's ability to defend those actions, and its potential fiscal impact in other cases, warrants review by this Court.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

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NOVEMBER 1977.

1a

APPENDIX A

IN THE UNITED STATES COURT OF CLAIMS
TRIAL DIVISION

No. 50328

(Filed: November 13, 1975)

STEPHEN PITCAIRN, AGENT

(Substituted for Autogiro Company of America)

v.

THE UNITED STATES

J. Edward Shinn, attorney of record for plaintiff,
John J. McAleese, Jr., of counsel.

B. Frederick Buchan, Jr., with whom was Assistant
Attorney General *Rex E. Lee* and *Thomas J. Scott, Jr.*,
for defendant.

OPINION *

LANE, *Trial Judge*: ** In *Autogiro Company of America v. United States*, 181 Ct. Cl. 55, 384 F.2d

* The trial judge's recommended decision and conclusion of law are submitted in accordance with Rule 134(h).

** Associate Judge, United States Court of Customs and Patent Appeals, sitting by designations pursuant to 28 U.S.C. § 293(a) and 28 U.S.C. § 2505.

391, 155 USPQ 697 (1967), *rehearing denied*, 184 Ct. Cl. 801 (1968), some 59 patent claims in 11 patents owned by plaintiff were held to be valid and specific patent claims were held to be infringed by seven different models of helicopters manufactured under contracts for defendant by Vertol, Hiller, Bell, Kaman or McCulloch. In 1973, the Autogiro Company of America was liquidated, and all of its assets, including its claims against the United States, one of which is the subject matter of this action, were transferred to its stockholders who appointed Stephen Pitcairn as their Agent. Pursuant to motion filed January 30, 1974, unopposed by defendant, Stephen Pitcairn, Agent, was substituted for Autogiro Company of America by the court's order filed February 12, 1974.

The parties to this suit agreed that during the accounting phase, both parties would have the right to present evidence as to the similarity or non-similarity between any model of rotary-wing aircraft or part thereof on which no proofs of infringement were offered at the original trial and those models of rotary-wing aircraft on which proofs were offered and which the court in its decision noted above found to infringe any of the patents remaining in suit. The parties have presented such proofs and have presented proof on various methods of computing the reasonable and entire compensation due plaintiff.

The main issues in the current phase of this litigation are (1) the similarity of non-similarity of some 39 models of rotary-wing aircraft to any of the seven

models which the court has already held to infringe one or more valid patent claims, and (2) how to compute the amount of the reasonable and entire compensation which plaintiff is to recover under 28 U.S.C. § 1498, for defendant's unauthorized use of plaintiff's inventions. After over 20 years of litigation, including some 62 trial sessions for the testimony of 57 witnesses on the two present issues, the parties are still poles apart on the end result. Examination of the voluminous record shows that there is little the parties can agree upon except that defendant spent over \$639 million, engine costs excluded, in the recovery period, 1946-64, for over 2,200 rotary-wing aircraft.

Defendant now contends that the maximum amount of compensation which this court should allow is \$532,279. This represents compensation at a rate of less than one percent, i.e., 0.0832 percent, on the total procurement cost of \$639,257,969. Defendant contends that delay compensation (if any) should be computed at the rates at which the defendant might have borrowed money by hypothetical long term Government bonds, the estimated rates varying from 2.4 percent to 4.6 percent per annum, the average being 3.33 percent for the period 1947-75.

Plaintiff contends that "reasonable and entire compensation" which this court should adopt should include royalties at established rates amounting to \$24,600,525, plus delay compensation amounting to \$27,851,192 through 1973, plus upward adjustment by \$15,034,439 of the royalties to compensate for

inflation, plus additional delay compensation for the period 1974 to date of payment, a total of some \$67,500,000 plus. The amount sought by plaintiff represents royalty compensation at a rate of 3.85 percent of the total procurement cost, and delay compensation at rates varying from 4 percent to 9 percent per annum, the average being 6.07 percent for the period 1947-73. The patents, patent claims, and models of rotary-wing aircraft now involved in this litigation are identified in the following table.

| Patent Number (and dates of Issue/Expiration) | Claims | Adjudicated Infringing Model Relative to which Similarity Proofs were Presented | Similar Models |
|---|----------------------|--|--|
| 1,948,457 (2-20-34/2-19-51) | 9, 12, 13, 14 & 18 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1 & HRP-2 |
| 1,990,291 (2-5-35/2-4-52) | 4 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1 & HRP-2 |
| " | 4 & 6 | Bell HTL-4 | Bell HTL-1, HTL-2, HTL-3, HTL-5, YH-12B, YH-13, YH-13A, H-13B, H-13D & H-13E |
| " | 4 & 6 | Hiller H-23A | Hiller HTE-1 |
| 1,994,465 (3-21-39/3-18-52) | 1, 5, 6, 7, 10 & 13 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1, HRP-2 & HUP-2 |
| 2,151,215 (2-21-35/3-20-56) | 1, 2, 3, 5, 6, 8 & 9 | Kaman HOK-1 | Kaman HTK-1 |
| " | 1, 5, 6 & 9 | Kaman HOK-1 | Bell HSL-1 |
| 2,321,572 (6-15-43/6-14-60) | 8, 9, 28 & 29 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,339,836 (1-25-44/1-24-61) | 1 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,344,966 (3-28-44/3-27-61) | 1 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,344,967 (3-28-44/3-27-61) | 1, 2, 3, 4, 13 & 18 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,380,582 (7-31-45/7-30-62) | 6-9, 12, 13, 16 & 17 | Bell HSL-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 1-5, 7-9, 12, 13, 16-21 | McCulloch MC-4C | McCulloch YH-30 | None |

| Patent Number (and dates of Issue/Expiration) | Claims | Adjudicated Infringing Model Relative to which Similarity Proofs were Presented | Similar Models |
|---|--|--|---|
| 2,380,582 | 1-5, 7-9, 12, 13, 16-21 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HUP-2 & HUP-3 (H-25A) |
| (7-31-45/7-30-62) | | | |
| " | 1, 2, 3, 5, 7, 8, 9, 12, 13, 16, 19, 20, & 21 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1 |
| " | 1-5, 7, 8, 12, 16, 18, 19, 20 & 21 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-2 |
| " | 1, 3, 4, 5, 16, 17, 18, 19 & 20 | Vertol/Piasecki HUP-1 | Vertol/Piasecki YHC-1B (YHC-47A), HC-1B (CH-47A) |
| " | 1-5, 7-9, 12, 13, 16-21 | Vertol/Piasecki H-21B | Vertol/Piasecki YH-21, H-21A, H-21C & H-21 (V-44) |
| " | 1, 3, 4, 5, 16, 17, 18, 19 & 20 | Vertol/Piasecki H-21B | Vertol/Piasecki YHC-1A, HRP-1 (CH-46A) |
| " | 1-5, 19 & 20 | Vertol/Piasecki H-21B | Bell YH-40, HU-1, HU-1A, HU-1B & YHU-1D |
| " | 1-5, 19 & 20 | Vertol/Piasecki H-21B | Cessna YH-41 & CH-1C |
| " | 1-5, 16, 18, 19 & 20 | Vertol/Piasecki H-21B | Gyrodyne DSN-1 & DSN-3 |
| " | 1, 2, 3 & 5 | Vertol/Piasecki H-21B | Kaman HU2K-1 |
| 2,380,583 | 56, 59, 60, 64 & 65 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HUP-2 & HUP-3 (H-25A) & HRP-1 |
| (7-31-45/7-30-62) | | | |
| " | 56, 60, 64 & 65 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-2 |
| " | 56, 59, 60, 64 & 65 | Vertol/Piasecki H-21B | Vertol/Piasecki YH-21, H-21A, H-21C, H-21 (V-44A), YHC-1A, HRP-1 (CH-46A), YHC-1B (YHC-47A) & HC-1B (CH-47A) |

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| Patent Number (and dates of Issue/Expiration) | Claims | Adjudicated Infringing Model Relative to which Similarity Proofs were Presented | Similar Models |
|---|-------------|--|--|
| 2,380,583 | 59 & 60 | Vertol/Piasecki H-21B | Kaman HOK-1, HUK-1, H-43A & H-43B |
| (7-31-45/7-30-62) | | | |
| " | 60 | Vertol/Piasecki H-21B | Gyrodyne DSN-1 & DSN-3 |
| " | 60 | Vertol/Piasecki H-21B | Cessna YH-41 & CH-1C |
| " | 62 | McCulloch MC-4C | McCulloch YH-30, Cessna YH-41 & CH-1C |
| " | 62 | McCulloch MC-4C | Kaman HU2K-1 |
| 2,421,364 | 33, 44 & 45 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A, H-43B & HH-43B |
| (5-27-47/5-26-64) | | | |

7a

Findings of fact based on the evidence of record accompany this opinion. Certain findings of fact contained in the original trial report filed in 1965, as listed in present finding 418, have been *readopted* since they were not included in the court's opinion. These are reproduced as an appendix hereto for convenience.

Similarity

The order of the trial judge filed April 17, 1969 provided:

(1) In the proceedings herein under Rule 47 (c) (2), neither party shall challenge the determinations of infringement, the validity, or the scope as construed by the court, of any claim found by the court to be valid and infringed in *Autogiro Company of America v. United States*, 181 Ct. Cl. 55, 384 F.2d 391 (1967), and

(2) The decision whether "other specified types or models of aircraft or parts thereof, procured by defendant" are infringing aircraft or parts for which defendant is liable shall be based on proofs of "similarity or non-similarity" of construction and mode of operation between (a) such other aircraft or parts and (b) those found by the court to infringe. *Marconi Wireless Telegraph Co. v. United States*, 99 Ct. Cl. 1 (1942); *Fauber v. United States*, 112 Ct. Cl. 302 (1948).

Neither party requested review or modification of that order.

The evidence relating to the similarity or the identity between adjudicated infringing models and the

additional assertedly similar models consisted of comparison of the pertinent structures and the operation of the adjudicated infringing helicopters with corresponding structure and the operation of the assertedly similar models. That proof-procedure is in accord with the principles enunciated by this court in *Marconi Wireless Telegraph Co. v. United States*, 99 Ct. Cl. 1, 53 USPQ 246 (1942), *modified*, 320 U.S. 1 (1943).

Plaintiff's similarity proofs could have been limited to the subject matter of but a single claim of each of the patents in suit found valid and found to be infringed by the adjudicated models, thereby establishing the required proof of similarity in reference to the subject matter. The plaintiff's proofs were not so limited. The patent claims in suit are of varying scope and it is not required that "similarity" be established as to a given structure in respect to *all* claims of varying scope as found to be infringed. By the same token, the scope of the royalty base for the various patent claims in suit varies in accordance with the scope of the claimed subject matter. In view of the unchallenged and uncontradicted evidence establishing similarity, and in most instances the identity, as to the assertedly similar structures, and in view of the paucity of any credible evidence of non-similarity, plaintiff's assertions on similarity are found to be fully supported by the record.

Royalty Compensation

The use or manufacture by or for the Government of a device or machine embodying any invention protected by a United States patent, is a taking of property by the Government under its power of eminent domain. The nature of the property thus taken is a license in the patent, the claimed invention of which is used or manufactured by or for the government, and such a license continues throughout the life of the patent, or the period of the infringing procurement, whichever is shorter.

As this court recently stated in *Calhoun v. United States*, 197 Ct. Cl. 41, 51, 453 F.2d 1385, 1391, 173 USPQ 438, 443 (1972):

... The theory underlying a patent suit in this court pursuant to that section [1498] is that the Government, when a patented device or invention is made or used by or for the United States, *ipso facto* takes by eminent domain a compulsory compensable license in the patent; the patentee obtains his Fifth Amendment just compensation for that taking through his action here under § 1498. See *Crozier v. Krupp*, 244 U.S. 290, 305, 307, 308 (1912); *Waite v. United States*, 282 U.S. 508, 8 USPQ 121 (1931); *Irving Air Chute Co. v. United States*, 117 Ct. Cl. 799, 802-03, 93 F.Supp. 633, 87 USPQ 246 (1950).

With respect to the basis for determining the patent owner's reasonable compensation where the evidence shows an established royalty rate used by the patent

owner in commercial licensing, the court went on to say:

Thus, the patentee established a royalty which he deemed to be appropriate for the use of his invention; and that royalty should form the basis for determining the compensation due plaintiffs [197 Ct. Cl. at 56, 453 F.2d at 1394, 172 USPQ at 445].

A leading authority for determining "reasonable" compensation under section 1498, where there is found to be an "established royalty," is *Marconi, supra*, wherein this court clearly announced the procedure to be followed in such cases:

The courts look with favor toward the establishment of a reasonable royalty as a measure of compensation in a patent accounting. This method usually obviates many difficulties connected with the establishing of such items as costs, profits, apportionments, expense of doing business, etc., all of which are matters frequently difficult to ascertain in a legal procedure.

If the plaintiff has already established a royalty by a license or licenses, he has himself fixed the average of his compensation, and if this has been established prior to the infringement, the task of the court then becomes easy. [99 Ct. Cl. at 49, 53 USPQ at 250-51.]

The mandate of *Marconi*, namely, that it is the royalty which "has been established prior to the infringement" that determines the compensation to be awarded as reasonable royalty in eminent domain actions under section 1498, is in accord with the gen-

eral law of eminent domain that the relevant value of the property taken is its value at the time of the taking.

Pursuant to *Marconi, supra*; *Crozier v. Krupp*, 224 U.S. 290 (1912); and *Calhoun, supra*, in determining the compensation due plaintiff in this action, and particularly in ascertaining that portion of such compensation to be assessed as royalty for a license to use the inventions, and in ascertaining the fair and reasonable value to plaintiff the court must examine the licensing history of plaintiff's patented property predating the first unlicensed use or manufacture by or for the Government of any of the inventions thereof. That examination here reveals an established royalty at that point in time. For such a purpose a royalty is established when it or its substantial equivalent has been used in a significant number of licenses granted prior to the time the infringing procurement began. In the present case, the infringement began with the first unlicensed use or manufacture by or for the Government of any helicopter which embodied any inventions of plaintiff's patented property, and which use or manufacture is within the scope of this accounting proceeding. The infringement by the defendant began with the completion on or about November 8, 1946 of the first Piasecki model XHRP-1 manufactured for the defendant. Thus, in accord with *Calhoun, supra*, and *Crozier, supra*, on or about November 8, 1946, the Government took from the plaintiff's "a license to use the inventions" of plaintiff's patented property.

As developed in the accompanying findings, the record reveals a comprehensive 16-year licensing program prior to November 1946 for plaintiff's patented property, including all the patents in suit, and that licensing program encompassed all the United States makers of rotary-wing aircraft manufactured for or sold to the Government, or manufactured for sale commercially. That licensing history and the royalty provisions thereof meet fully the test for an established royalty. In 1930, plaintiff licensed Kellett Aircraft Corp. at the rate of 6 percent of retail sale price of the complete aircraft. This rate was changed to 5 percent during 1932-45. The Government procured rotary-wing aircraft from Kellett in the period prior to World War II and approved payment of the 5 percent royalty thereon to Autogiro. Pitcairn Autogiro Company was licensed during 1936-41 at the 5 percent rate. Pitcairn-Larsen Autogiro Company was licensed in 1941 at the rate of 5 percent of the retail sale price of the complete aircraft or at 7 percent of the sale price if sold without engine or standard equipment. A.G.A. Aviation Corporation was licensed 1941-43 at the same 5 percent and 7 percent rates. The Firestone Tire and Rubber Company was licensed by the plaintiff 1943-46 at the same 5 percent and 7 percent rate subject to a sliding scale. Firestone was again licensed about March 12, 1946, as of September 1, 1944, at the rate of 10 percent of the retail sale value of the patent components, i.e., a per patent royalty, but with a royalty ceiling of 5 percent of the total retail sale value of the complete aircraft and

spare parts, and subject to a sliding scale which reduced the rate as royalties exceeded stated amounts. The sliding scale provided that for the first \$50,000 of royalties, the sum of the per patent royalties applicable to each such complete helicopter and spare parts therefor but not to exceed 5 percent of the total sale value; for the next \$45,000 of royalties 9/10ths of the initial rate; for the next \$40,000 of royalties 8/10th of the initial rate; and thereafter 7/10ths of the initial rate. The license taken by Firestone in March of 1946 was offered at the same rates to other manufacturers of rotary-wing aircraft. The terms of that license established the license policy of the plaintiff at a time shortly prior to the start in late 1946 of the defendant's unauthorized use of plaintiff's patented inventions. The defendant could have and should have taken a license at those rates, but refused.

The evidence shows that Autogiro received patent royalties under nine licenses during the 1932-46 period, some at the 5 percent rate, some at the 7 percent rate, and some at .85 percent nominal wartime rate.

In 1943, the plaintiff unilaterally selected and proffered to the Government and to the industry a *nominal wartime* royalty rate of .85 percent of the contract price of the aircraft. The nominal rate for the duration of World War II plus 6 months was plaintiff's contribution to the war effort and was not plaintiff's established license policy. Plaintiff granted *wartime* licenses, which covered all of plaintiff's patents including the patents here in suit, to Nash-Kelvinator

Corporation, United Aircraft Corporation and Kellett Aircraft Corporation. These wartime licenses were at the rate of .85 percent of the contract price for rotary-wing aircraft made for and sold to the Government and these licenses expired on March 2, 1946, i.e., 6 months after the cessation of hostilities.

Each and every license granted by plaintiff during the period 1930-46 comprehended all of plaintiff's patented property including but not limited to the patents remaining in suit, and each specified that royalties were to be paid if *any* of the licensed property was used in the licensed aircraft.

In 1946 after the cessation of hostilities, the Government declined plaintiff's offer of a regular license apparently because the Government intended to require patent indemnity clauses in procurement contracts with its helicopter manufacturers.

Defendant urges that plaintiff did not have in effect an established royalty rate since plaintiff later granted United Aircraft Corporation a license in 1947 containing a separate royalty for each patent licensed including the patents in suit, with a 2 percent ceiling, and still later granted United a paid-up license in 1949. These *negotiated* licenses as well as certain license communications between plaintiff and Piasecki, Bell and McDonnell, as a matter of law, are not material in this proceeding because they all took place *after* the date on which infringement by the defendant began. Defendant's suggestion that certain of plaintiff's licenses are "tantamount to misuse" is without merit. The mere accumulation of patents is not in

and of itself illegal. The payment of royalties according to a percentage of the sale price is not unreasonable. What plaintiff's licensees obtained was the privilege of using any or all of plaintiff's patents and developments if and as they desired to use them. Plaintiff's licensing policy did not constitute misuse. *Automatic Radio Co. v. Hazeltine*, 339 U.S. 827 (1950). This court has already determined in its decision of October 13, 1967, that defendant is liable to the plaintiff.

The plaintiff's established royalty rates immediately prior to the commencement of infringement justify the method utilized by plaintiff in finding that reasonable royalty compensation totals \$24,570,525, which sum is about 3.85 percent of the total dollar cost of the infringing procurement. It is noted that compensation at such average rate is below compensation recommended as reasonable in the trial judge's report filed September 4, 1975 in *Tektronix, Inc. v. United States*, No. 79-61, where the recommended rate is 27.5 percent.

Defendant asserts that the royalty bases selected by plaintiff are "outrageous, incredible, totally inaccurate, excessive, vastly inflated," etc. The evidence fails to support such blatant assertions either as facts or conclusions. The royalty bases selected by plaintiff's expert witnesses for representative patent claims are found to be reasonable and based on the best evidence available. The base used for each claim in suit is limited to those portions of the helicopter mechanisms that are encompassed by specific patent claim

recital. The provisions of plaintiff's established per-patent royalty are satisfied by the embodiment of the invention recited in at least one claim of a patent in the defendant's constructively licensed helicopters or spare parts therefor. Other infringed claims of the respective patents either do not involve other components or in some instances would not afford as broad a royalty base as the representative claims selected. A patent is infringed even if only one claim of the patent is infringed. *Marconi, supra*, 99 Ct. Cl. at 62-71, 53 USPQ at 257-61.

Defendant proposes royalty rates that produce royalty compensation which is about 1/48th of that resulting from the application of plaintiff's established royalty rates. Defendant's witness on royalty rates proposed initial royalty rates of 1 percent or less for most of the patents in suit and scaled these rates downward because of alleged Government contributions to the development of a practical military helicopter and alleged Government contribution to the creation of a market for helicopters. The record shows that said witness lacked both the qualifications and the information necessary for a technological evaluation of the patents in suit. There is no evidence of record to support either the royalty base or the royalty rates proposed by defendant's witness. He testified that he had not negotiated any licenses regarding rotary-wing aircraft and that "reasonableness" of royalties was not a factor which he considered. There is no competent evidence of record to support the royalty rates proposed by the defendant.

The computation of the royalty compensation by application of plaintiff's established per-patent royalty rates to the royalty bases is set forth in detail in the accompanying findings. The average percentage is somewhat less than the alternative 5 percent rate specified in many of plaintiff's licenses. Defendant has urged that plaintiff's determination of the estimated cost of parts and their installation is based on early cost proposals and makes no allowance for any changes in actual cost experience. However, defendant admits that no firm evidence of installed costs is available. After considering all the circumstances involved in this litigation, it is concluded that royalty compensation in the amount of \$24,570,525 is reasonable and justified.

Contribution

Defendant's requested findings of fact assert that the order of magnitude of the contribution of each of the patents in suit to the rotary-wing aircraft industry is "zero, minimal, or negative." Defendant bases such requested findings primarily on a *rehash* of the several patent application files and the prior patents cited therein. The court has already considered in detail the patent application files and the many prior patents cited by defendant and has found specific patent claims valid and infringed by one or more of seven helicopter types procured by defendant. The weight of the evidence previously considered by the court shows that such prior art items are either totally irrelevant to the subject matter of the patent

claims in suit or are fundamentally deficient, impractical and/or inoperative. There is no credible evidence that the helicopters made for or used by the defendant might have been more satisfactory if plaintiff's patented inventions had not been incorporated therein. Defendant's contention that royalty compensation should be computed at rates of less than 1 percent based on its contention that plaintiff's contributions to the industry were minimal, is without merit.

Spare Parts

The Firestone license defines "Licensed Aircraft" as not only "aircraft with sustaining rotors . . . embodying or manufactured or operating according to any or all of the inventions covered by Patents of Autogiro," but also "parts and assemblies of parts embodying or manufactured or operating according to any or all of said inventions for use in such aircraft" With regard to spare-part rotor hub assemblies for the HUP-1 helicopter, in accord with plaintiff's established per-patent royalty the royalty base for claim 14 of the '457 patent is each spare-part HUP-1 rotor hub assembly, and the royalty therefor would be 10 percent of its retail sale value. However, spare-part rotor hub assemblies which embody or which are manufactured according to the subject matter of claim 14 of the '457 patent are, *per se*, Licensed Aircraft, i.e., parts "for use in" the Government's infringing helicopters for which such spare-part hub assemblies are procured; and in accord

with the 5 percent royalty ceiling provision of plaintiff's established royalty for Licensed Aircraft, the total royalty for such spare-part hub assemblies may not exceed 5 percent of their retail sale value. The foregoing comments are equally applicable in respect to the effective 5 percent royalty for spare-part rotor hub assemblies for the HRP-1 and HRP-2 helicopters.

Plaintiff has limited its requests for royalties on all spare-part Vertol, Kaman, and Gyrodyne rotor blades which are within the scope of this accounting, to the subject matter of claim 60 of the '583 patent as held to be infringed by either the HUP-1 or the H-21B rotor blades, and that subject matter is also the basis for plaintiff's requests for royalties on the rotor blades as installed on the Gyrodyne DSNs. Defendant's contentions concerning claim 65 of the '583 patent and the various features thereof, with respect to recovery of royalties for spare-part rotor blades are completely moot at this point. The various features of claim 65, none of which are included in claim 60, and to which defendant has referred, are totally immaterial to the determination of plaintiff's right to recover royalties for spare-part rotor blades with respect to the subject matter of claim 60 as held to be infringed. Defendant's contention that plaintiff is not entitled to royalties for spare-part hub assemblies and rotor blades is without substance.

Delay Compensation

The "reasonable and entire compensation" due plaintiff under 28 U.S.C. § 1498 includes not only

reasonable royalties but also an appropriate amount which compensates plaintiff for defendant's delay in payment of those royalties. This additional amount has been referred to as "delay compensation." As stated by Justice Holmes in *Waite v. United States*, 282 U.S. 508, 509 (1931), the "reasonable and entire compensation" provided by the statute "was intended to accomplish complete justice as between plaintiff and the United States." The amount due as delay compensation is determined by multiplying the annually accrued royalties by an appropriate annual percentage rate. The periods of time covered by the computation of that additional amount extend from the dates of defendant's procurements until the date of payment of the court's judgment herein.

The amounts heretofore awarded as delay compensation by this court in eminent domain cases, including cases under 28 U.S.C. § 1498, have been computed at various rates. From 1927-37 the rate was 6 percent. During 1937-44 the rate was 5 percent and after 1944 the rate of 4 percent has been used. In the court's decisions in those earlier cases there is little or no discussion of the theory or basis upon which a particular percentage rate of delay compensation was chosen.

The rates used by the court in the past to calculate delay compensation have generally followed trends of changes in investment yield rates during the 1920's, 1930's and 1940's. The rate to be used during the delay compensation periods involved in this suit, i.e., from 1946 until payment of the court's judg-

ment herein, should also follow the changes in yield rates. These may be determined by reference to an established, well recognized, widely used and authoritative index of investment yields. Plaintiff urges that the court use for this purpose Moody's Composite Index of Yields on Long Term Corporate Bonds.

Defendant has urged that the court should establish, as the rate of delay compensation due plaintiff, an amount equal to the average annual yields on a series of hypothetical long term Government bonds which defendant constructs subjectively. Both plaintiff and defendant thus urge that a varying rate of delay compensation should be established by the court in this case. However, defendant's position is that the various rates of delay compensation should be established without reference to the court's own varying rates of delay compensation in prior periods, and defendant ignores any relationship between the rates it now proposes and the rates of delay compensation which this court has used just prior to the beginning of the accounting period in this case. Both parties recognize that the 4 percent annual rate of delay compensation which was applied by this court after 1944 should not arbitrarily be continued in this case. Both parties agree that the court should establish a varying annual percentage rate for delay compensation which is appropriate under the facts and circumstances in this case. The parties disagree on the principles which determine an appropriate varying rate, and on the varying rate itself. The amount due as delay compensation in this case involves a determina-

tion by this court of an appropriate base or yardstick by which to measure and thereby establish the award for delay compensation. The method of determining delay compensation should be justified by the evidence, and the rate should be responsive to the ends of justice. The ultimate test, of course, is that plaintiff must receive just compensation.

Examination of evidence of record relating to the trends indicated by Moody's Composite Index of Yields on Long Term Corporate Bonds leads to the conclusion that in view of all the circumstances involved in this prolonged litigation, it is reasonable to divide the delay period into several periods and to utilize a rate of 4 percent for the period 1947-55, a rate of 4½ percent for 1956-60, a rate of 4¾ percent for 1961-65, a rate of 6½ percent for the period 1966-70, and a rate of 7½ percent for the period 1971-75. It is noted that Pub. L. No. 93-625, § 7, 88 Stat. 2108, signed by the President on January 3, 1975, now provides for the payment of interest by the Government at the rate of 9 percent per annum on overpayments of federal internal revenue taxes, effective July 1, 1975. Said law also provides for annual adjustment of the interest rate when the prime rate charged by banks during September is at least a full point more or less than the Government interest rate then in effect. The Congress thus gives statutory sanction to the use of a commercial rate index or indicator in determining the rate of interest to be paid by the Government.

Plaintiff has urged that the delay compensation should run from the mid-point of each year during the accounting period since the actual procurement dates for the many aircraft involved in this case are scattered throughout each calendar year. In *Calhoun, supra*, the court selected August 15, 1954, mid-point of the period from April 29, 1954 to November 21, 1956, for the start of delay compensation. In *Amerace Esna Corp. v. United States*, 172 USPQ 305 (1972), the trial judge selected March 8, 1955, mid-point of the period September 8, 1952 to September 8, 1958, for start of delay damages. The court adopted that computation in a *per curiam* opinion reported at 199 Ct. Cl. 175, 462 F.2d 1377, 174 USPQ 517 (1972). In *Breese Burners, Inc. v. United States*, 140 Ct. Cl. 9, 115 USPQ 179 (1957), the court decided that interest would run from December 31 of each year involved until date of payment. In *Badowski v. United States*, 150 Ct. Cl. 482, 278 F.2d 934, 125 USPQ 656 (1960), the court held that reasonable and entire compensation should include interest to date of payment to compensate plaintiff for the delay in payment. In *van Veen v. United States*, 181 Ct. Cl. 884, 386 F.2d 462, 156 USPQ 403 (1967), the court held that plaintiff was entitled to recover interest as part of just compensation from January 1, 1967 to the date of payment. Defendant objects to the allowance of interest from the mid-point of each calendar year and asserts that the acceptance date of each infringing aircraft is available. Plaintiff's license agreement with Firestone in 1946 provided for the payment of

royalties semi-annually within 45 days after June 30 and December 31 of each year on all licensed aircraft sold, leased or put into use during the preceding 6-month period. In view of all the circumstances involved in this litigation, it is concluded that reasonable delay compensation herein should be computed on a calendar year basis with interest starting on January 1 of each year on the royalties accrued during the preceding calendar year. Delay compensation is part of reasonable and entire compensation and is not considered as interest *per se*.

Defendant's debtor theory that delay compensation should be based on the yields on a series of hypothetical Government bonds was recently rejected by one of the court's trial judges in *Arcata National Corp. v. United States*, No. 771-71, report filed July 25, 1974. The trial judge in that case concluded that delay compensation should be paid for the period involved at the rate of 6.6 percent simple annual interest, a rate based on his reference to corporate AAA bond interest rates and prime interest rates. A stipulated settlement based thereon was confirmed by order of the court on January 3, 1975, *Arcata National Corp. v. United States*, 206 Ct. Cl. 819. The court's order entered judgment for Arcata in the sum of \$35,382,251.50 together with simple interest thereon at the rate of 6.6 percent per annum until date of payment.

After considering all the circumstances involved in the present protracted litigation it is concluded that delay compensation computed at the varying rates for varying periods set out above, amount to \$26,355,753

through December 31, 1975, is both reasonable and justified. The determination of a proper amount of delay compensation is a judicial function. The discharge of that function requires the exercise of judgment.

Plaintiff has presented evidence of the expenditure of \$1,669,658 during the period 1951-73 for attorneys' fees, witness fees and other expenses allocable to the 11 patents which the court has held valid and infringed. This incomplete total is about 3.28 percent of the recommended royalty and delay compensation combined. In a recent case involving the taking of flowage easements over farmlands, this court allowed attorneys' fees at 25 percent of the total compensation. *King et al. v. United States*, 205 Ct. Cl. 512, 504 F.2d 1138 (1974). In the present litigation, plaintiff has not included attorneys' fees in his requested reasonable and entire compensation. Therefore, no recommendation with respect to attorneys' fees, witness fees and expenses is made.

Experimental Use

The order of the court filed July 12, 1973, *Autogiro Company of America v. United States*, 202 Ct. Cl. 1105, permitted the defendant to make "offers of proof" with respect to the manufacture and use of accused helicopters by the defendant "for testing and experimental purposes." At the accounting trial, defendant presented such offers of proof through the testimony of 13 witnesses and 147 documentary ex-

hibits pertaining to about 93 of the 2,237 rotary-wing aircraft involved in this litigation. Defendant has requested 153 detailed findings of fact relative to experimental use, all based on its offers of proof. No findings of fact are or need be made on the testing and experimental use of accused aircraft. It may be noted, however, that at least one of defendant's witnesses testified that the testing of helicopters "was use of those helicopters for the Government."

Defendant contends that under this court's decisions in *Ordnance Engineering Corp. v. United States*, 84 Ct. Cl. 1 (1936), *cert. denied*, 302 U.S. 708 (1937) and 96 Ct. Cl. 278 (1942), and *Chesterfield v. United States*, 141 Ct. Cl. 838, 159 F.Supp. 371 (1958), devices of an infringing construction which were used for experimental or test purposes are to be excluded from the computation of compensation under 28 U.S.C. § 1498. That statute provides:

Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture.

Defendant's interpretation and attempted expansion of the court's decisions in the two *Ordnance* cases *supra*, pertaining to what those decisions refer to as "ballistic shell" and "experimental shell," are

erroneous; and those decisions are inapplicable to the present case. Although in *Ordnance* the court did exclude from the accounting the so-called "experimental shell," there is no discussion in the opinion in either of those cases as to the rationale for their exclusion. The only statement in the *Ordnance* decisions on "experimental" is one sentence: "Experimental shell are shell built for experimental purposes." There is no elucidation as to the determinants of "experimental purposes." Thus, the *Ordnance* decisions provide no rationale for, or guidance for determining the propriety of, excluding from an accounting so-called "experimental" devices except that they are devices "*Built for experimental purposes.*" In the present case there is no evidence in defendant's offer of proof that any of the helicopters to which defendant's "experimental use" contentions pertain were built solely for experimental purposes. For that reason alone, the *Ordnance* decisions are inapposite.

Defendant's reliance on the court's opinion in *Chesterfield*, *supra*, is likewise without merit. The court's statement in its opinion there that experimental use does not infringe constituted pure *obiter dictum*. The court's opinion specifically stated:

Where the court finds as a fact that the patent claims in suit are clearly invalid . . . it may not be necessary to consider the issue of infringement.

The court's reference to experimental use was clearly unnecessary to the disposition reached in *Chesterfield*.

It is also noted that in *Chesterfield* the defendant procured by purchase, not by manufacture by or for the Government, certain alloys which had been developed and used for supercharged buckets and blades. In *Chesterfield*, the claim arose from defendant's *use* of purchased alloys. In the present case, the infringing aircraft were clearly *manufactured* for the defendant.

Plaintiff has excluded from its present claim static test mechanisms manufactured for defendant. Numerous research and development contracts were entered into by the defendant and various manufacturers for the design, development and manufacture of experimental helicopters and none of those specific helicopters are the subject of this litigation.

Defendant urges the court to exclude from compensation any aircraft used by the defendant for testing, evaluational, demonstrational or experimental purposes. Use for such purposes is use by or for the Government and is compensable. Obviously every new helicopter must be tested for lifting ability, for the effect of vibration on installed equipment, flight speed and range, engine efficiency, and numerous other factors. Tests, demonstrations, and experiments of such nature are intended uses of the infringing aircraft manufactured for the defendant and are in keeping with the legitimate business of the using agency. Experimental use is not a defense in the present litigation.

Defendant has also referred to the experimental use portion of Trial Judge Cooper's opinion and report to the court in *Douglas v. United States*, 181

USPQ 170 (1974). The court's opinion in that litigation, 206 Ct. Cl. 96, 510 F.2d 364, 184 USPQ 613 (1975), *cert. denied*, October 6, 1975, did not rule on experimental use since the patent claim was held to be invalid. While the trial judge's discussion of the experimental use rule in various courts is not the law of the case in *Douglas*, it is a well reasoned and historical analysis. In *Douglas*, the testing of the Kestrel aircraft conducted by the Army, Navy and Air Force, to evaluate the aircraft was found by the trial judge to be use of the aircraft which served a valuable governmental purpose.

Royalty Adjustment Compensation

Plaintiff seeks royalty adjustment compensation in the amount of over \$15 million to compensate for the gradual decrease in the purchasing power of the dollar between 1947 and 1973. No cases are cited which would require the defendant to assume plaintiff's risk of any inflation in eminent domain actions. There is no express or implied contract that the risk of inflation was to be assumed by the United States. There was no royalty escalation clause in plaintiff's license agreements. Plaintiff is not entitled to an adjustment in the size of compensation by reason of inflation occurring subsequent to the date of infringement. Plaintiff, like everyone else, must bear the risk of change in the value of its property by reason of inflation or deflation. The inclusion of royalty adjustment compensation for inflation is a part of rea-

sonable and entire compensation would place plaintiff in a much better position than those who can do nothing about inflation. The Government may do many things, but has not yet reached the point of compensating one citizen or all citizens who have suffered losses from the effects of inflation.

APPENDIX B

IN THE UNITED STATES COURT OF CLAIMS

No. 50328

(Decided December 15, 1976)

STEPHEN PITCAIRN, AGENT (SUBSTITUTED FOR
AUTOGIRO COMPANY OF AMERICA)

v.

THE UNITED STATES

J. Edward Shinn, attorney of record for plaintiff,
John J. McAleese, Jr., of counsel.

B. Frederick Buchan, Jr. and *Thomas J. Scott*, with
who was *Assistant Attorney General Rex E. Lee*, for
defendant.

Before COWEN, *Chief Judge*, DAVIS, SKELTON,
NICHOLS, KASHIWA, KUNZIG, and BENNETT, *Judges*.

OPINION

PER CURIAM: This case comes before the court on
plaintiff's and defendant's exceptions to the recom-
mended opinion, findings of fact and conclusion of

law, submitted by Judge Donald E. Lane, Associate
Judge, United States Court of Customs and Patent
Appeals, sitting by designation as Trial Judge in this
case, pursuant to 28 U.S.C. § 293(a) and § 2505, in
accordance with United States Court of Claims Rule
134(h). In an earlier decision, *Autogiro Company
of America v. United States*, 181 Ct. Cl. 55, 384 F. 2d
391, 155 USPQ 697 (1967), *rehearing denied*, 184
Ct. Cl. 801 (1968), the court held that some 59 patent
claims in 11 patents owned by plaintiff were valid and
specific claims were infringed by seven different
models of helicopters manufactured for defendant
under contracts by Vertol, Hiller, Bell, Kaman and
McCulloch. The case is before the court now on (1)
the similarity or non-similarity of some 39 models of
rotary-wing aircraft to any of the representative
models which the court has already held to be infring-
ing, and (2) computation of the reasonable and entire
compensation which plaintiff is entitled to recover
under 28 U.S.C. § 1498.¹

The case has been submitted to the court on the
briefs and oral arguments of counsel. Upon considera-
tion thereof, since the court agrees with several por-
tions of the trial judge's recommended decision, it
adopts (with minor modifications) Part I, *Similarity*;
Part III, *Contribution*; Part IV, *Spare Parts*; Part V,
Delay Compensation; and Part VI, *Experimental Use*.
The court also adopts with modification the trial

¹ We shall refer to the Autogiro Company as plaintiff, al-
though Stephen Pitcairn, Agent, has been substituted.

judge's findings of fact, except with respect to royalty compensation, and has made its own findings on that subject.² We have deleted those parts of the trial judge's recommended decision entitled *Royalty Compensation*, Part II, and *Royalty Adjustment Compensation*, Part VII, and have substituted our own Part II, *Royalty Compensation*, in the modified trial judge's opinion which follows. We have also added our own discussion of *Delay Compensation* to Part V, *infra*, in supplementation of the trial judge's consideration of that subject. The conclusion of law has been changed to reflect our different view of *Royalty Compensation*.

The opinion and conclusion of law of the trial judge, as modified and supplemented by the court, follow:

In *Autogiro Company of America v. United States*, 181 Ct. Cl. 55, 384 F. 2d 391, 155 USPQ 697 (1967), *rehearing denied*, 184 Ct. Cl. 801 (1968), some 59 patent claims in 11 patents owned by plaintiff were held to be valid and specific patent claims were held to be infringed by seven different models of helicopters manufactured under contracts for defendant by Vertol, Hiller, Bell, Kaman and McCulloch. In 1973, the Autogiro Company of America was liquidated, and all of its assets, including its claims against the United States, one of which is the subject matter of this action, were transferred to its stockholders who appointed Stephen Pitcairn as their Agent. Pursuant to motion filed January 30, 1974, unopposed by de-

² Though the findings, as modified, are adopted by the court, they are not printed with this opinion because they are so voluminous.

fendant, Stephen Pitcairn, Agent, was substituted for Autogiro Company of America by the court's order filed February 12, 1974.

The parties to this suit agreed that during the accounting phase, both parties would have the right to present evidence as to similarity or non-similarity between any model of rotary-wing aircraft or part thereof on which no proofs of infringement were offered at the original trial and those models of rotary-wing aircraft on which proofs were offered and which the court in its decision noted above found to infringe any of the patents remaining in suit. The parties have presented such proofs and have presented proofs on various methods of computing the reasonable and entire compensation due plaintiff.

The main issues in the current phase of this litigation are (1) the similarity or non-similarity of some 39 models of rotary-wing aircraft to any of the seven models which the court has already held to infringe one or more valid patent claims, and (2) how to compute the amount of the reasonable and entire compensation which plaintiff is to recover under 28 U.S.C. § 1498, for defendant's unauthorized use of plaintiff's inventions. After over 20 years of litigation, including some 62 trial sessions for the testimony of 57 witnesses on the two present issues, the parties are still poles apart on the end result. Examination of the voluminous record shows that there is little the parties can agree upon except that defendant spent over \$639 million, engine costs excluded, in the recovery period, 1946-64, for over 2,200 rotary-wing aircraft.

Defendant now contends that the maximum amount of compensation which this court should allow is \$532,279. This represents compensation at a rate of less than 1%, i.e., 0.0832%, on the total procurement cost of \$639,257,969. Defendant contends that delay compensation (if any) should be computed at the rates at which the defendant might have borrowed money by hypothetical long term Government bonds, the estimated rates varying from 2.4% to 4.6% per annum, the average being 3.33% for the period 1947-75.

Plaintiff contends that "reasonable and entire compensation" which this court should adopt should include royalties at established rates amounting to \$24,570,525, plus delay compensation amounting to \$27,851,192 through 1973, plus upward adjustment by \$15,034,439 of the royalties to compensate for inflation, plus additional delay compensation for the period 1974 to date of payment, a total of some \$67,500,000 plus. The amount sought by plaintiff represents royalty compensation at a rate of 3.85% of the total procurement cost, and delay compensation at rates varying from 4% to 9% per annum, the average being 6.07% for the period 1947-73. The patents, patent claims, and models of rotary-wing aircraft now involved in this litigation are identified in the following table

| Patent Number (and date of Issue/Expiration) | Claims | Adjusted Infringing model relative to which similarity proofs were presented | Similar models |
|--|--|--|---|
| 1,948,457 (2-20-34/2-19-51) | 9, 12, 13, 14 & 18 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1 & HRP-2 |
| 1,990,291 (2-5-35/2-4-52) | 4 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1 & HRP-2 |
| Do | 4 & 6 | Bell HTL-4 | Bell HTL-1, HTL-2, HTL-3, YH-12B, YH-13, YH-13A, H-13B, H-13D & H-13E |
| Do | 4 & 6 | Hillier H-23A | Hillier HTE-1 |
| 1,994,465 (3-19-35/3-18-52) | 1, 5, 6, 7, 10 & 13 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1, HRP-2 & HUP-2 |
| 2,151,215 (2-21-39/3-20-56) | 1, 2, 3, 5, 6, 8 & 9 | Kaman HOK-1 | Kaman HTK-1 |
| Do | 1, 5, 6 & 9 | Kaman HOK-1 | Bell HSL-1 |
| 2,321,572 (6-15-43/6-14-60) | 8, 9, 28 & 29 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,339,836 (1-25-44/1-24-61) | 1 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,344,966 (3-28-44/3-27-61) | 1 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,344,967 (3-28-44/3-27-61) | 1 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A & H-43B |
| 2,380,582 (7-31-45/7-30-62) | 6-9, 12, 13, 16 & 17 | Bell HSL-1 | None |
| Do | 1-5, 7-9, 12, 13, 16-21 | McCulloch MC-4C | McCulloch YH-30 |
| Do | 1-5, 7-9, 12, 13, 16-21 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HUP-2 & HUP-3 (H-25A) |
| 2,380,582 (7-31-45/7-30-62) | 1, 2, 3, 5, 7, 8, 9, 12, 13, 16, 19, 20 & 21 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-1 |
| Do | 1-5, 7, 8, 12, 16, 18, 19, 20 & 21 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-2 |
| Do | 1, 3, 4, 5, 16, 17, 18, 19 & 20 | Vertol/Piasecki HUP-1 | Vertol/Piasecki YHC-1B (YHC-47A), HC-1B (CH-47A) |
| Do | 1-5, 7-9, 12, 13, 16-21 | Vertol/Piasecki H-21B | Vertol/Piasecki YH-21, H-21A, H-21C & H-21 (V-44) |
| Do | 1, 3, 4, 5, 16, 17, 18, 19 & 20 | Vertol/Piasecki H-21B | Vertol/Piasecki YHC-1A, HRB-1 (CH-46A) |
| Do | 1-5, 19 & 20 | Vertol/Piasecki H-21B | Bell YH-40, HU-1, HU-1A, HU-1B & YHU-1D |
| Do | 1-5, 19 & 20 | Vertol/Piasecki H-21B | Cessna YH-41 & CH-1C |
| Do | 1-5, 16, 18, 19 & 20 | Vertol/Piasecki H-21B | Gyrodyne DSN-1 & DSN-3 |
| Do | 1, 2, 3 & 5 | Vertol/Piasecki H-21B | Kaman HU2K-1 |

| Patent number (and date of issue/expiration) | Claims | Adjudicated infringing model relative to which similarity proofs were presented | Similar models |
|--|---------------------|---|--|
| 2,380,582 (7-31-45/7-30-62) | 56, 59, 60, 64 & 65 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HUP-2 & HUP-3 (H-25A) & HRP-1 |
| Do | 56, 60, 64 & 65 | Vertol/Piasecki HUP-1 | Vertol/Piasecki HRP-2 |
| Do | 56, 59, 60, 64 & 65 | Vertol/Piasecki H-21B | Vertol/Piasecki YH-21, H-21A, H-21C, H-21 (V-44A), YHC-1A, HRB-1 (CH-46A), YHC-1B (YHC-47A) & HC-1B (CH-47A) |
| Do | 59 & 60 | Vertol/Piasecki H-21B | Kaman HOK-1, HUK-1, H-43A & H-43B |
| Do | 60 | Vertol/Piasecki H-21B | Gyrodyne DSN-1 & DSN-3 |
| Do | 60 | Vertol/Piasecki H-21B | Cessna YH-41 & CH-1C |
| Do | 62 | McCulloch MC-4C | McCulloch YH-30, Cessna YH-41 & CH-1C |
| Do | 62 | McCulloch MC-4C | Kaman HU2K-1 |
| 2,421,364 (5-27-47/5-26-64) | 33, 44 & 45 | Kaman HOK-1 | Kaman HTK-1, HUK-1, H-43A, H-43B & HH-43B |

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I. Similarity

The order of the trial judge filed April 17, 1969 provided:

(1) In the proceedings herein under Rule 47 (c) (2), neither party shall challenge the determinations of infringement, the validity, or the scope as construed by the court, of any claim found by the court to be valid and infringed in *Autogiro Company of America v. United States*, 181 Ct. Cl. 55, 384 F. 2d 391 (1967), and

(2) The decision whether "other specified types or models of aircraft or parts thereof, procured by defendant" are infringing aircraft or parts for which defendant is liable shall be based on proofs of "similarity or non-similarity" of construction and mode of operation between (a) such other aircraft or parts and (b) those found by the court to infringe. *Marconi Wireless Telegraph Co. v. United States*, 99 Ct. Cl. 1 (1942); *Fauber v. United States*, 112 Ct. Cl. 302 (1948).

Neither party requested review or modification of that order.

The evidence relating to the similarity or the identity between adjudicated infringing models and the additional assertedly similar models consisted of comparison of the pertinent structures and the operation of the adjudicated infringing helicopters with the corresponding structure and the operation of the assertedly similar models. That proof-procedure is in accord with the principles enunciated by this court in *Marconi Wireless Telegraph Co. v. United States*, 99

Ct. Cl. 1, 53 USPQ 246 (1942), *modified*, 320 U.S. 1, *order on remand*, 100 Ct. Cl. 566 (1943).

Plaintiff's similarity proofs could have been limited to the subject matter of but a single claim of each of the patents in suit found valid and found to be infringed by the adjudicated models, thereby establishing the required proof of similarity in reference to the subject matter. The plaintiff's proofs were not so limited. The patent claims in suit are of varying scope and it is not required that "similarity" be established as to a given structure in respect to *all* claims of varying scope as found to be infringed. By the same token, the scope of the royalty base for the various patent claims in suit varies in accordance with the scope of the claimed subject matter. In view of the unchallenged and uncontradicted evidence establishing similarity, and in most instances the identity, as to the assertedly similar structures, and in view of the paucity of any credible evidence³ of non-similarity, plaintiff's assertions on similarity are found to be fully supported by the record.

II. Royalty Compensation³

The use or manufacture by or for the Government of a device or machine embodying any invention protected by a United States patent, is a taking of prop-

³ This part has been substituted for the similarly titled portion of Judge Lane's opinion. Only the Chief Judge, Judge Davis and Judge Skelton join in the discussion contained in this part II of the opinion. However, Judges Nichols and Kunzig concur in the result of this part of the opinion.

erty by the Government under its power of eminent domain. The nature of the property thus taken is a license in the patent, the claimed invention of which is used or manufactured by or for the Government, and such license continues throughout the life of the patent, or the period of the infringing procurement, whichever is shorter.

As this court recently stated in *Calhoun v. United States*, 197 Ct. Cl. 41, 51, 453 F.2d 1385, 1391, 172 USPQ 438, 443 (1972):

* * * The theory underlying a patent suit in this court pursuant to that section [1498] is that the Government, when a patented device or invention is made or used by or for the United States, *ipso facto* takes by eminent domain a compulsory compensable license in the patent; the patentee obtains his Fifth Amendment just compensation for that taking through his action here under § 1498. * * *

See, Waite v. United States, 282 U.S. 508 (1931); *Crozier v. Krupp*, 244 U.S. 290 (1912); *Irving Air Chute Co. v. United States*, 117 Ct. Cl. 799, 93 F.Supp. 633, 87 USPQ 246 (1950).

The first step in determining reasonable compensation is to ascertain when the "taking" occurred. We are guided in this by our prior decision in *Irving Air Chute Co.*, *supra*. The Government there urged that if it manufactured or used any devices covered by any of plaintiff's patents more than six years before the petition was filed, the cause of action should be barred by the statute of limitations. The Govern-

ment argued that by using or manufacturing a patented article, it acquired a license to continue to manufacture or use the article for the duration of the patent, that the taking occurred once and for all with this first unauthorized use. Plaintiff urged that it should be able to recover for articles manufactured within six years of the date of the filing of its petition, even as to patents covering devices manufactured by or for the Government more than six years before the petition was filed. We explained that "The statute, 28 U.S.C. § 1498 * * * does not tell us, expressly, whether only one cause of action, or several will accrue from a succession, perhaps with long intervals between, of manufactures or uses by the Government." 117 Ct. Cl. at 804, 93 F.Supp. at 636, 87 USPQ at 248. Since it was not possible to ascertain the scope and duration of the interest taken at the time of the first unauthorized use, we held in *Irving Air Chute* that the cause of action did not accrue at the first taking for all future acquisition by the Government. See also, *Coakwell v. United States*, 178 Ct. Cl. 654, 372 F.2d 508, 153 USPQ 307 (1967); *Regent Jack Mfg. Co. v. United States*, 167 Ct. Cl. 815, 337 F.2d 649, 143 USPQ 136 (1964); *Gage v. United States*, 122 Ct. Cl. 160, 103 F.Supp. 1022, 93 USPQ 103, cert. denied, 344 U.S. 829 (1952). So too in the instant case.

The trial judge refused to consider transactions occurring after November 8, 1946, in establishing the reasonable royalty because he deemed that they were not material, as a matter of law, since they took place

after the date of the first infringement by defendant. The trial judge determined that the defendant's first unauthorized use of plaintiff's patents, on or about November 8, 1946, constituted a taking, all at once, of plaintiff's entire property. This analysis runs contrary to *Irving Air Chute*, which we think was correctly decided. The takings occurred whenever the Government procured or used a device covered by any of plaintiff's patents without a license. Our analysis accords, not only with *Irving Air Chute* but also with the terms of 28 U.S.C. 1498, which provides in part: "Whenever an invention described in and covered by a patent of the United States is *used or manufactured* by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for *such* use and manufacture." (Emphasis added.)

The recovery period runs from November 1946, when the Government first infringed one of the patents in suit, until late in May 1964, the expiration date of the last patent involved. It is not easy to fix upon appropriate royalties for the takings during that long time-span, but we think it can be done with fairness to both parties.

The evidence shows that Autogiro received patent royalties under some nine licenses during the period (1932-1946) before the years not at issue. Some were

at a 5% rate, some at 7% and some at an .85% nominal wartime rate.⁴

We put aside the wartime rate, both because it preceded the years with which we are here concerned, and also because the particular circumstances of the wartime procurement of patent licenses make it very difficult to equate the very low-level wartime rate with

⁴ In 1930, plaintiff licensed Kellett Aircraft Corp. at the rate of 6% of retail sale price of the complete aircraft. This rate was changed to 5% during 1932-45. The Government procured rotary-wing aircraft from Kellett in the period prior to World War II and approved payment of the 5% royalty thereon to Autogiro. Pitcairn Autogiro Company was licensed during 1936-41 at the 5% rate. Pitcairn-Larsen Autogiro Company was licensed in 1941 at the rate of 5% of the retail sale price of the complete aircraft or at 7% of the sale price if sold without engine or standard equipment. A.G.A. Aviation Corporation was licensed 1941-43 at the same 5% and 7% rates. The Firestone Tire and Rubber Company was licensed by the plaintiff in 1943-46 at the same 5% and 7% rate subject to a sliding scale. Firestone was again licensed about March 12, 1946, as of September 1, 1944, at the rate of 10% of the retail sale value of the patent components, *i.e.*, a per patent royalty, but with a royalty ceiling of 5% of the total retail sale value of the complete aircraft and spare parts, and subject to a sliding scale which reduced the rate as royalties exceeded stated amounts. The sliding scale provided that for the first \$50,000 of royalties, the sum of the per patent royalties applicable to each such complete helicopter and spare parts therefor but not to exceed 5% of the total sale value; for the next \$45,000 of royalties 9/10s of the initial rate; for the next \$40,000 of royalties 8/10s of the initial rate. The license taken by Firestone in March of 1946 was offered at the same rates to other manufacturers of rotary-wing aircraft.

fair market value for the post-war period or with an established post-war license policy.⁵

Likewise, we reject the pre-war rates as proper guidelines for the post-war period because, in our view, plaintiff itself established, roughly contemporaneous with the beginning of the recovery period, a new post-war rate, for general use, which it deemed satisfactory to it.⁶ Effective as of January 1, 1947,

⁵ In 1943, the plaintiff unilaterally selected and proffered to the Government and to industry a nominal wartime royalty rate of .85% of the contract price of the aircraft. Since the Royalty Adjustment Act of 1942 (Act), 56 Stat. 1013, later codified as 35 U.S.C. §§ 89-96 (1946 ed.), was in effect at that time, the Government could have reduced the rates by order if plaintiff had not been cooperative. Pursuant to that Act, any department or agency which ordered the manufacture or use of an invention could fix royalty rates which were deemed fair and just, taking into account the conditions of wartime production, if it believed that the rates provided by existing licensing agreements were unreasonable or excessive. The licensor's sole remedy was a suit to recover the difference between the royalties fixed and specified by the agency and the royalties found by the court to be fair and just compensation. Act §§ 1-2. Further, the head of any Government agency was authorized to enter into agreements and settlements in compromise of any claim by any inventor or licensor. Act § 3. Plaintiff granted wartime licenses, which covered all of plaintiff's patents including the patents here in suit, to Nash-Kelvinator Corporation, United Aircraft Corporation and Kellett Aircraft Corporation. These wartime licenses were at the rate of .85% of the contract price for rotary-wing aircraft made for and sold to the Government and these licenses expired on March 2, 1946, *i.e.*, 6 months after the cessation of hostilities.

⁶ We include in the war and pre-war category the Firestone agreement, made in March 1946 as of September 1944 (*see* note 4, *supra*), since very early in the recovery period that

Autogiro entered into an agreement with United Aircraft Corporation for a royalty of \$500 an aircraft for 1946-1948, with the \$500 ceiling to change to 2% of the air-frame price on and after January 1, 1949.⁷ After this United agreement was executed, the plaintiff proposed similar licenses to other major manufacturers of helicopters, in effect announcing its post-war rate to be 2%. These companies all refused to take licenses but the significant fact is that plaintiff made the offer and made it widely. In 1949, after some months of negotiation triggered by United's disinclination to let the 2% rate go into effect, plaintiff granted United a paid-up license at considerably less than 2% per aircraft. These two United licenses were the only ones actually made by Autogiro during the recovery period from November 1946 to May 1964. But as we have said plaintiff did make a general offer in 1947, at the 2% figure, to other manufacturers. That proffered rate was neither increased nor lowered before suit was brought here in 1951 (after which everyone concerned awaited the end of the litigation).

It has been suggested on behalf of the plaintiff that the 2% figure cannot serve as an established royalty rate used by the patentee in commercial licensing (*see*

license (which predated the recovery period) was definitely superseded, as plaintiff's general policy, by the 1947 United Aircraft agreement. *See* the text immediately *infra*.

⁷ The agreement could be terminated at any time after December 31, 1948, upon the giving of a six-months written notice.

the test set forth in *Calhoun v. United States*, 197 Ct. Cl. 41, 55-56, 453 F.2d 1385, 1393-94 (1972)) because (a) the first (1947) United agreement was mainly the product of compromise to avoid litigation, and (b) mere offers by the patentee are inadmissible to prove value. We can accept neither premise.

The record does not show that the 1947 United License was a one-sided effort by United to force Autogiro to compromise its true position or face years of grinding litigation in this court under 28 U.S.C § 1498.⁸ Whatever it may now say,⁹ plaintiff does not seem at all to have made that evaluation of the United agreement at the time it was signed. In a letter of October 1948 to Harold Pitcairn (president of Autogiro), one of Autogiro's patent counsel (Raymond Synnestvedt) wrote about a recent visitor whose "main purpose was to sound me out on whether the Autogiro Company might grant him a license—and what the current licensing terms are. Since written outlines of the present licensing terms have been distributed fairly widely, I saw no reason why I should not orally outline the terms to [the visitor], which I did. He had not heard of the reduction from the previous ceiling of 5% to the postwar ceiling of 2%, and

⁸ The defendant was by far the largest consumer of products embodying plaintiff's inventions and had refused in 1947 to enter into license agreements, preferring to rely on indemnity agreements from its suppliers.

⁹ At trial, Autogiro's patent counsel testified that the cost, trouble and worry of litigation were factors in reducing the royalty rate to 2% in 1947.

I think he was quite interested." Again (as indicated above), Autogiro gave an outline of a proposed license agreement with a 2% ceiling to three manufacturing companies, with the royalty rates described as "being quite representative of what is currently being offered."¹⁰ These statements give not the slightest hint that Autogiro felt that the United agreement (or the like agreements proffered to the other manufacturers) was unfair or afforded it less than its due in the period now at issue.

It is a truism that patents can change or decline in value, and that seems to have been the case for Autogiro, even in its own eyes, during the post-war years. It wanted a package deal for any and all of its patents, and some of these were expiring from time to time. Engineering data for Autogiro (manufactured in the pre-war era) were not useful for helicopters (the article made after the war). The post-war procurement of devices using plaintiff's inventions was bound to be very much larger than the pre-war purchases—and the royalty rates could therefore decline significantly. Nor is it a sign of invalidating compromise that, especially where a packet of patents is involved, there may have been some doubts as to the validity of some of the claims.¹¹ Auto-

¹⁰ 4 *Nichols, Eminent Domain* (3d ed. rev. 1975), § 12.311 [2], declares that statements made in the process of making an offer concerning facts in the controversy which are not mere concessions made for the purpose of such offer are admissible against the party making them.

¹¹ After the 1947 agreement but before the 1949 paid-up license, a United official wrote (in July 1948) to the president of Autogiro:

giro probably had some of those doubts itself and adjusted its demands accordingly. For these reasons the 2% United agreement seems to us highly probative under the rule we reiterated in *Calhoun v. United States*, 197 Ct. Cl. 41, 55-57, 453 F. 2d 1385, 1393-94 (1972). *Calhoun* teaches that the mere surmise that a bargained license may possibly include some

"The agreement as concluded provided, however, for an increase in royalty ceiling to 2 percent of retail sales value for the calendar year 1949 and succeeding years. United signed the license agreement with the expressed intention of reviewing the entire situation, with special reference to royalty rates, prior to assuming any obligation for royalties in 1949 or subsequent years.

"From the beginning, United's problem has been to determine what royalty, if any, it was warranted in paying under the Autogiro patents, in order that United might be free from possible litigation from that source in carrying forward its research, experimental and manufacturing programs. In this connection, since by far the greater part of our sales of helicopters for some time to come will be to the Government, any suit involving such sales would have to be brought against the Government in the Court of Claims.

"In each appraisal of the patent situations, royalty rates have been opposed to the possible results, both favorable and unfavorable, of litigation should we proceed without a license. Each successive appraisal has resulted in a lesser value to be placed upon Autogiro's patents, and we would fully expect this trend to continue in the future. As you know, United has never felt the need of engineering assistance from Autogiro and it has never received, nor does it contemplate receiving in the future, any such assistance."

It is to be noted that this letter was written over a year after the 1947 agreement became effective, and cannot retroactively turn that 1947 pact into a mere compromise-to-avoid-litigation, especially in view of Autogiro's clear acceptance of, and satisfaction with, the 1947 agreement.

discount for litigation-avoidance does not *per se* preclude use of an accepted commercial rate as establishing reasonable and entire compensation. Earlier, *Saulnier v. United States*, 161 Ct. Cl. 223, 314 F. 2d 950 (1963), took heavy account, in setting compensation, of the plaintiff's previous settlement of infringement claims against the British government where that settlement appeared to be satisfactory and reasonable. See 161 Ct. Cl. at 226-27, 314 F.2d at 951-52.

As for the offers not translated into actual agreements, the authorities which reject such use (see the cases cited in 4 *Nichols, Eminent Domain* (3d rev. 1975), §§ 12.311[2] and 12.3113[3]) concern attempts by the condemnee to seek a *higher* award on the basis of offers made by or to him (or to utilize a third-party offer with respect to comparable property to gain a *higher* award). They do not involve an effort by the condemnor to rely on an offer made *by* the condemnee as proof of the value of the property. It is obvious that, although the inherent defects of offers made *by* condemnee-owners prevent the opposite party, the condemnor, from being bound by such offers, there is no reason why the owner himself should not be held to his own offer. In this instance, the post-1946 offers were not casual or *ad hoc* but were circulated "fairly widely" in the industry. It is appropriate to take them into account and to give them great weight.¹²

¹² There is no support for the view that, until six months after the Japanese Peace Treaty in April 1952, the plaintiff's

All this means that the post-1946 United agreement at 2% as well as the post-1946 offers made by Autogiro at that same level—plaintiff's own position deliberately taken in 1947 and 1948—have a *prima facie* title to acceptance as the reasonable royalty for 1946-1964. The question remains whether the royalty should be set at a still lower figure, as defendant requests. This is not a simple skein to unravel, but our conclusion is that the 2% rate should be accepted for all infringements (after 1948, see note 16). The main reason is that, quite unlike the 2% figure, there is no indication from Autogiro that any lesser royalty was ever satisfactory, acceptable, or offered generally. The patentee's situation was unusual in that the Government was the dominant consumer of the articles embodying the patents, and this put the plaintiff to a disadvantage since it was very unlikely that an injunction could be obtained against United (or other infringers).¹³ We therefore discount, in the ab-

licensing terms would be influenced by the Government's theoretical right to fix war-time royalties under the Royalty Adjustment Act of 1942. Plaintiff's own statements give no intimation of this nor does the record suggest that this theoretical power had any real impact after the actual end of the World War II hostilities in 1945-1946. It should also be added that the Adjustment Act's standard was fair and just compensation, and it cannot be assumed without proof that the mere naked existence of that statute had such a depressing effect. Cf. *United States v. Commodities Trading Corp.*, 339 U.S. 121 (1950).

¹³ We refer to the fact that a patentee cannot obtain an injunction against a government-supplier or government-contractor and is confined, for his exclusive remedy, to a suit

sence of any expression of contentment, Autogiro's granting to United, at the latter's strong insistence, of a paid-up license in 1949.¹⁴ No offers to other companies, stemming from this paid-up license, were made by plaintiff.¹⁵ The theoretical constructions of defendant's expert—who reached a figure which was only a fraction of 2%—were based in largest part on the paid-up license; the expert did not consider plaintiff's hobbled position in trying to determine what the "parties might well have agree upon" (*Saulnier v. United States, supra*, 161 Ct.Cl. at 227 (1963)) if Autogiro had been relatively free of this one-sided litigation pressure. For the present case, in which there was only one actual license during almost the entire span of the infringement years, and this suit began early in the recovery period, the best that we can do is to accept the only royalty rate "offered freely [by Autogiro] to everyone" in the industry during that period, a rate actually agreed to, for a time by United, the

for "reasonable and entire compensation" (i.e. monetary compensation) against the United States under 28 U.S.C. § 1498. These suits generally take a long time to come to their conclusion and the patentee, even if he prevails, normally obtains no compensation until the litigation is at an end. (The reference is not to the Royalty Adjustment Act, *see* note 12, *supra*.)

¹⁴ *See* note 11, *supra*.

¹⁵ Suit was brought here in 1951, and it seems clear that after that date the problem of plaintiff's compensation would be, and was, left to the result of the litigation.

largest manufacturer. *See Calhoun v. United States, supra*, 197 Ct. Cl. at 56, 453 F. 2d at 1394.¹⁶

III. Contribution

Defendant's requested findings of fact assert that the order of magnitude of the contribution of each of the patents in suit to the rotary-wing aircraft industry is "zero, minimal, or negative." Defendant bases such requested findings primarily on a rehash of the several patent application files and the prior patents cited therein. The court has already found specific patent claims valid and infringed by one or more of seven helicopter types procured by defendant. The weight of the evidence shows that such prior art items are either totally irrelevant to the subject matter of the patent claims in suit or are fundamentally deficient, impractical and/or inoperative. There is no credible evidence that the helicopters made for or used by the defendant might have been more satisfactory if plaintiff's patented inventions had not be incorporated therein. Defendant's contention that royalty compensation should be computed at rates of less than 1%, based on its contention that plaintiff's contributions to the industry were minimal, is without merit.

¹⁶ For the period before 1949, the 1947 United agreement provided that the royalty on any one aircraft should not exceed \$500, and also that from 1947 onward the minimum royalty per year should be \$10,000. We consider these provisions of that agreement to be applicable to this case, though the only

IV. Spare Parts

The United license defines "Licensed Aircraft" as not only "aircraft with sustaining rotors * * * embodying or manufactured or operating according to any or all of the inventions covered by Patents of Autogiro," but also "parts and assemblies of parts embodying or manufactured or operating according to any or all of said inventions for use in such aircraft. * * *" With regard to spare-part rotor hub assemblies for the HUP-1 helicopter, in accord with plaintiff's per-patent royalty the royalty base for claim 14 of the '457 patent is each spare-part HUP-1 rotor hub assembly, and the royalty therefor would be 10% of its retail sale value. However, spare-part rotor hub assemblies which embody or which are manufactured according to the subject matter of claim 14 of the '457 patent are, *per se* Licensed Aircraft, *i.e.*, parts "for use in" the Government's infringing helicopters for which such spare-part hub assemblies are procured; and in accord with the 2% royalty ceiling provision of plaintiff's established royalty for Licensed Aircraft, the total royalty for such spare-part hub assemblies may not exceed 2% of their retail sale value. The foregoing comments are equally applicable in respect to the effective 2% royalty for spare-part rotor hub assemblies for the HRP-1 and HRP-2 helicopters.

one that is likely to be operative is the \$500 ceiling for aircraft used by or manufactured for the defendant prior to January 1, 1949. From January 1, 1949, the 2% rate applies.

Plaintiff has limited its requests for royalties on all spare-part Vertol, Kaman and Gyrodyne rotor blades which are within the scope of this accounting, to the subject matter of claim 60 of the '583 patent as held to be infringed by either the HUP-1 or the H-21B rotor blades, and that subject matter is also the basis for plaintiff's requests for royalties on the rotor blades as installed on the Gyrodyne DSNs. Defendant's contentions concerning claim 65 of the '583 patent and the various features thereof, with respect to recovery of royalties for spare-part rotor blades are completely moot at this point. The various features of claim 65, none of which are included in claim 60, and to which defendant has referred, are totally immaterial to the determination of plaintiff's right to recover royalties for spare-part rotor blades with respect to the subject matter of claim 60 as held to be infringed. Defendant's contention that plaintiff is not entitled to royalties for spare-part hub assemblies and rotor blades is without substance.

V. Delay Compensation

A.

The "reasonable and entire compensation" due plaintiff under 28 U.S.C. § 1498 includes not only reasonable royalties but also an appropriate amount which compensates plaintiff for defendant's delay in payment of those royalties. This additional amount has been referred to as "delay compensation." As stated by Justice Holmes in *Waite v. United States*,

282 U.S. 508, 509 (1931), the "reasonable and entire compensation" provided by the statute "was intended to accomplish complete justice as between plaintiff and the United States." The amount due as delay compensation is determined by multiplying the annually accrued royalties by an appropriate annual percentage rate. The periods of time covered by the computation of that additional amount extend from the dates of defendant's procurements until the date of payment of the court's judgment herein.

The amounts heretofore awarded as delay compensation by this court in eminent domain cases, including cases under 28 U.S.C. § 1498, have been computed at various rates. From 1927-37 the rate was 6%. During 1937-44 the rate was 5% and after 1944 the rate of 4% has been used. In the court's decisions in those earlier cases there is little or no discussion of the theory or basis upon which a particular percentage rate of delay compensation was chosen.

The rates used by the court in the past to calculate delay compensation have generally followed trends of changes in investment yield rates during the 1920's, 1930's and 1940's. The rate to be used during the delay compensation periods involved in this suit, *i.e.*, from 1946 until payment of the court's judgment herein, should also follow the changes in yield rates. These may be determined by reference to an established, well recognized, widely used and authoritative index of investment yields. Plaintiff urges that the court use for this purpose Moody's Composite Index of Yields on Long Term Corporate Bonds.

Defendant has urged that the court should establish, as the rate of delay compensation due plaintiff, an amount equal to the average annual yields on a series of hypothetical long term Government bonds which defendant constructs subjectively. Both plaintiff and defendant thus urge that a varying rate of delay compensation should be established by the court in this case. However, defendant's position is that the various rates of delay compensation should be established without reference to the court's own varying rates of delay compensation in prior periods, and defendant ignores any relationship between the rates it now proposes and the rates of delay compensation which this court has used just prior to the beginning of the accounting period in this case. Both parties recognize that the 4% annual rate of delay compensation which was applied by this court after 1944 should not arbitrarily be continued in this case. Both parties agree that the court should establish a varying annual percentage rate for delay compensation which is appropriate under the facts and circumstances in this case. The parties disagree on the principles which determine an appropriate varying rate, and on the varying rate itself. The amount due as delay compensation in this case involves a determination by this court of an appropriate base or yardstick by which to measure and thereby establish the award for delay compensation. The method of determining delay compensation should be justified by the evidence, and the rate should be responsive to the ends

of justice. The ultimate test, of course, is that the plaintiff must receive just compensation.

Examination of evidence of record relating to the trends indicated by Moody's Composite Index of Yields on Long Term Corporate Bonds leads to the conclusion that in view of all the circumstances involved in this prolonged litigation, it is reasonable to divide the delay period into several periods and to utilize a rate of 4% for the period 1947-55, a rate of 4½% for 1956-60, a rate of 4¾% for 1961-65, a rate of 6½% for the period 1966-70, and a rate of 7½% for the period 1971-75. It is noted that Pub. L. No. 93-625, § 7, 88 Stat. 2108, signed by the President on January 3, 1975, now provides for the payment of interest by the Government at the rate of 9% per annum on overpayments of federal internal revenue taxes, effective July 1, 1975. Said law also provides for annual adjustment of the interest rate when the prime rate charged by banks during September is at least a full point more or less than the Government interest rate then in effect. The Congress thus gives statutory sanction to the use of a commercial rate index or indicator in determining the rate of interest to be paid by the Government.

Plaintiff has urged that the delay compensation should run from the mid-point of each year during the accounting period since the actual procurement dates for the many aircraft involved in this case are scattered throughout each calendar year. In *Calhoun, supra*, the court selected August 15, 1954, mid-point of the period from April 29, 1954 to November 21,

1956, for the start of delay compensation. In *Amerace Esna Corp. v. United States*, 172 USPQ 305, 308 (1972), the trial judge selected March 8, 1955, mid-point of the period September 8, 1952 to September 8, 1958, for start of delay damages. The court adopted that computation in a *per curiam* opinion reported at 199 Ct. Cl. 175, 462 F. 2d 1377, 174 USPQ 517 (1972). In *Breese Burners, Inc. v. United States*, 140 Ct. Cl. 9, 115 USPQ 179 (1957), the court decided that interest would run from December 31 of each year involved until date of payment. In *Badowski v. United States*, 150 Ct. Cl. 482, 278 F. 2d 934, 125 USPQ 656 (1960), the court held that reasonable and entire compensation should include interest to date of payment to compensate plaintiff for the delay in payment. In *van Veen v. United States*, 181 Ct. Cl. 884, 386 F. 2d 462, 156 USPQ 403 (1967), the court held that plaintiff was entitled to recover interest as part of just compensation from January 1, 1967 to the date of payment. Defendant objects to the allowance of interest from the mid-point of each calendar year and asserts that the acceptance date of each infringing aircraft is available. Plaintiff's license agreement with United in 1947 provided for the payment of royalties semi-annually within 45 days after June 30 and December 31 of each year on all licensed aircraft sold, leased or put into use during the preceding 6-month period. In view of all the circumstances involved in this litigation, it is concluded that reasonable delay compensation herein should be computed on a calendar year basis with interest start-

ing on January 1 of each year on the royalties accrued during the preceding calendar year. Delay compensation is part of reasonable and entire compensation and is not considered as interest *per se*.

Defendant's debtor theory that delay compensation should be based on the yields of a series of hypothetical Government bonds was recently rejected by one of the court's trial judges in *Arcata National Corp. v. United States*, No. 771-71, report filed July 25, 1974. The trial judge in that case concluded that delay compensation should be paid for the period involved at the rate of 6.6% simple annual interest, a rate based on his reference to corporate AAA bond interest rates and prime interest rates. A stipulated settlement based thereon was confirmed by order of the court on January 3, 1975, *Arcata National Corp. v. United States*, 206 Ct. Cl. 819. The court's order entered judgment for Arcata in the sum of \$35,882,-251.50 together with simple interest thereon at the rate of 6.6% per annum until date of payment.

After considering all the circumstances involved in the present protracted litigation it is concluded that delay compensation computed at the varying rates for varying periods set out above is both reasonable and justified. The determination of a proper amount of delay compensation is a judicial function. The discharge of that function requires the exercise of judgment.

Plaintiff has presented evidence of the expenditure of \$1,669,658 during the period 1951-73 for attorneys' fees, witness fees and other expenses allocable to the

11 patents which the court has held valid and infringed. In a recent case involving the taking of flowage easements over farmlands, this court allowed attorneys' fees at 25% of the total compensation. *King v. United States*, 205 Ct. Cl. 512, 504 F. 2d 1138 (1974). In the present litigation, plaintiff did not include attorneys' fees in his requested reasonable and entire compensation before the trial judge. Therefore, no determination with respect to attorneys' fees, witness fees and expenses is made.

B.¹⁷

As indicated in subpart A, *supra*, the trial judge has recommended delay compensation based on a stepped percentage rate varying from 4% for the years 1947-55 up to 7½% for the years 1971-75. The trial judge determined these percentages after examining the trends in investment yields, as indicated by Moody's Composite Index of Yields on Long Term Corporate Bonds. The trial judge noted that in many cases the court awarded delay compensation at a rate of 6% during the period 1927-37, 5% during the period 1937-44 and 4% during the period 1945-48, which rates were about 1 to 2 percentage points higher than the long term corporate bond yields during the same periods. The Government urged the trial judge and the court to calculate delay damages based on the average annual yields of

¹⁷ This subpart B of Part V of the opinion has been added by the court.

a series of hypothetical long term Government bonds, in effect, the cost to the Government of borrowing money. This measure of damages is contrary to the established rule of eminent domain that damages should be determined by what the condemnee has lost, not what the taker has gained. 3 *Nichols, Eminent Domain*, (3rd Ed. Rev. 1975), § 8.61:

The just compensation to which an owner is entitled when his property is taken by eminent domain is regarded in law from the point of view of the owner and not of the condemnor. In other words, just compensation in the constitutional sense is what the owner has lost, and not what the condemnor has gained.

(Fn. omitted citing, *e.g.* *Boston Chamber of Commerce v. Boston*, 217 U.S. 189 (1910, per Holmes, J.)) The yield on a series of hypothetical Government bonds is not relevant in ascertaining the injury plaintiff has suffered. It measures compensation only according to the point of view of the taker without reference to that of the owner since he is hardly likely to be able to borrow money at the rates the Government can.¹⁸ *King v. United States*, 205 Ct.

¹⁸ *Blankenship v. United States of America*, 9th Cir., Nos. 75-1704, 75-3722, decided October 15, 1976, is not to the contrary. It dealt with relatively short-term, actual Treasury securities—not with hypothetical long-term Government bonds never actually issued. The Court of Appeals held that the trier had to consider and take into account such short-term actual Government obligations (not that the trier was bound by those rates). In the present case, in contrast, the defendant emphasized and emphasizes hypothetical very-long-term securities, “constructed” by the defendant for the purposes of

Cl. 512, 504 F. 2d 1138 (1974), does not require a different result. *King* turns on its facts and we do not extend that decision here. The parties in *King* stipulated that the interest rate awarded should be commensurate with the rates of interest paid by the Government in the market for its own borrowing purposes. Plaintiffs urged an interest rate of 6%, whereas the Government proposed a rate of 4%. The trial judge, *in view of the special circumstances of the case*, that is, the parties’ stipulation described above, recommended an award based on the annually fluctuating rate on long-term United States Government bonds, which ranged from 3.95% in 1962 to 5.70% by the end of 1970. The court adopted the trial judge’s recommended award in a *per curiam* opinion. It is clear that the use of the rate of interest on long-term Government bonds as a method of determining interest as part of just compensation

this litigation. Judge Lane had before him, in addition to defendant’s construction of hypothetical long-term Government bonds, record evidence of shorter-term, actual Government obligations of the type dealt with in *Blankenship*—and he clearly took these latter into account. See the last three sentences of court finding 478 (trial judge finding 526); “One-year Government bonds produce an annual average simple interest equivalent rate of 6.91 percent average for the period 1946-1975. An average equivalent rate of 6.28 percent is produced by using 4-year Government bonds (the average of yield statistics for 3- to 5-year Government bonds). The delay compensation asserted by defendant, an average equivalent rate, from defendant’s hypothetical long term Government bonds, of 3.10 percent, is both inadequate and improper.”

rests on the stipulation and not on the independent determination of the court.

The court has considered *Arcata National Corporation v. United States*, (order reported) 206 Ct. Cl. 819 (1975), for two reasons: first, Judge Lane mentions it in his recommended decision (*supra*, subpart A) as a case in which the trial judge rejected defendant's theory that delay compensation should be based on the yields of a series of hypothetical Government bonds, and, second, that trial judge awarded a 6.6% covering a period for part of which Judge Lane awarded 7.5%. The trial judge in *Arcata* recommended an award which included 6.6% for delay damages (No. 777-71 decided July 25, 1974), but the court subsequently, by order, accepted a stipulation of the parties that plaintiff's written offer of settlement with 6.6% interest had been accepted. *Arcata* is not a judgment of the court, but a compromise settlement, and as such, it is not an appropriate measure of just compensation. 4 *Nichols, Eminent Domain*, (3rd Ed. Rev. 1975) § 12.3113[2].

In *Arcata*, the Government urged that interest at a rate of 6%, the statutory rate, 16 U.S.C. § 79c(b) (2), satisfied the requirements of just compensation, relying on the fact that on or about October 2, 1968, the taking date, the Government was paying 6% on its debt obligations. Plaintiff sought to recover interest at a rate of 7.36%, representing the average rate of interest it actually incurred on its debt obligations from the date of taking to a date just before trial. The parties recognized that ascertainment

of just compensation was a judicial function and thus the court was not limited to the statutory figure of 6%, in effect, that the statutory 6% figure in the Redwood National Park Act, 16 U.S.C. § 79a-79j, was not binding. The trial judge rejected defendant's method as being too narrow and restricted in failing to consider other relevant data. We also reject such an approach.

The *Arcata* trial judge did not accept the plaintiff's method *per se*, but concluded that on the basis of the entire record, 6.6% was a fair rate of interest. In reaching this conclusion, the trial judge consolidated the prime interest rate for the period September 1968 through March 1973 (6.56%) with plaintiff's computed average on its borrowings for the same period (7.36%), achieving an average of 6.86%. The trial judge reconstructed plaintiff's interest computations to account for compensating balances and recognized that plaintiff did receive significant interest payments for 1969 and 1971. Prior to 1969, plaintiff was a prime customer at various banks and lending institutions and was able to negotiate loans at very favorable rates. After 1969, plaintiff had to pay higher rates. It is clear that the rate used by the trial judge was based in part on the actual cost to plaintiff of borrowing money. The court does not approved of this actual cost method. Plaintiffs are not usually in the business of borrowing money and thus costs based on their own borrowing rates are highly speculative. A plaintiff with a poor credit rating could theoretically receive an award of just

compensation at very high interest rates because its actual cost of borrowing money might be very high, while another might be penalized for having a good credit rating. Neither the cost to the Government nor to the plaintiff of borrowing money is an appropriate measure of just compensation, and therefore, we are not bound by the 6.6% rate used in *Arcata*.

The court agrees with the method used by Judge Lane in this case. As the trial judge explained in the findings of fact, long-term corporate bond yields are an indicator of broad trends and relative levels of investment yields or interest rates. They cover the broadest segment of the interest rate spectrum. The corporate bond market is large, substantially in excess of long-term Government bonds and long-term corporate yields measure basic trends and relative levels of interest rates from one period to another.

It is true that the court has computed interest in eminent domain cases at a rate of 4% since 1944. It should be noted that the prime interest rate was below 4% during the years 1944-1956. From 1956 through 1960, the prime rate fluctuated between 3% and 5%. Our awards covering that period allowed a rate, as we think they should have, higher than the prime rates and the rates at which the Government could then have borrowed money. The prime rate increased steadily, from 4.5% in 1960 to 8.5% in 1969. During the period 1971-72, the prime rate ranged from $4\frac{3}{8}\%$ to 6%. Most recently, in 1973-76, the prime rate has varied from 6.75% to 12%.

When the prime rate or Moody's Corporate Index increased, the court failed to increase its interest award, not because of any affirmative determination that such an increase was improper or unwarranted, but rather because it was not confronted with a case that presented the necessary evidence properly. See, *Amerace Esna Corporation v. United States*, 199 Ct. Cl. 175, 462 F.2d 1377, 174 USPQ 517 (1972), (no evidence offered to prove requested 6% rate); *Drakes Bay Land Co. v. United States*, 198 Ct. Cl. 506, 459 F.2d 504 (1972), (no proof offered other than stipulated fact that defendant paid 6% interest on district court judgment condemnation cases involving land which became part of the same National Park); *Confederated Salish & Kootenai Tribes v. United States*, 193 Ct. Cl. 801, 437 F.2d 458 (1971), (statistical data offered to court, but not to trial judge); *Carlstrom v. United States*, 147 Ct. Cl. 297, 177 F. Supp. 245 (1959), (no special circumstances warranted award higher than 4%).

The parties in this case have briefed the issue and presented sufficient evidence to the trial judge to allow an informed and reasoned determination as to the appropriate measure of just compensation, just as we said they should have done in *Confederated Salish*, if they wanted the time-honored rates to be reconsidered in light of new economic conditions. Accordingly, the court adopts Part V of the trial judge's recommended decision as its own in addition to these added comments.

Plaintiff has not shown any basis for recovery of further delay compensation on account of inflation, and its claim for this is denied.

VI. *Experimental Use*

The order of the court filed July 12, 1973, *Autogiro Company of America v. United States*, 202 Ct. Cl. 1105, permitted the defendant to make "offers of proof" with respect to the manufacture and use of accused helicopters by the defendant "for testing and experimental purposes." At the accounting trial, defendant presented such offers of proof through the testimony of 13 witnesses and 147 documentary exhibits pertaining to about 93 of the 2,237 rotary-wing aircraft involved in this litigation. Defendant has requested 153 detailed findings of fact relative to experimental use, all based on its offers of proof. No findings of fact are or need be made on the testing and experimental use of accused aircraft. It may be noted, however, that at least one of defendant's witnesses testified that the testing of helicopters "was use of those helicopters for the Government."

Defendant contends that under this court's decisions in *Ordnance Eng'r Corp. v. United States*, 84 Ct. Cl. 1 (1936), *cert. denied*, 302 U.S. 708 (1937) and 96 Ct. Cl. 278 (1942), and *Chesterfield v. United States*, 141 Ct. Cl. 838, 159 F.Supp. 371 (1958), devices of an infringing construction which were used for experimental or test purposes are to be excluded from the computation of compensation under 28 U.S.C. § 1498. That statute provides:

Whenever an invention described in and covered by a patent of the United States is used or manufactured by or for the United States without license of the owner thereof or lawful right to use or manufacture the same, the owner's remedy shall be by action against the United States in the Court of Claims for the recovery of his reasonable and entire compensation for such use and manufacture.

Defendant's interpretation and attempted expansion of the court's decisions in the two *Ordnance* cases *supra*, pertaining to what those decisions refer to as "ballistic shell" and "experimental shell," are erroneous; and those decisions are inapplicable to the present cast. Although in *Ordnance* the court did exclude from the accounting the so-called "experimental shell," there is no discussion in the opinion in either of those cases as to the rationale for their exclusion. The only statement in the *Ordnance* decisions on "experimental" is one sentence: "Experimental shell are shell built for experimental purposes." There is no elucidation as to the determinants of "experimental purposes." Thus, the *Ordnance* decisions provide no rationale for, or guidance for determining the propriety of excluding from an accounting so-called "experimental" devices except that they are devices "built for experimental purposes." In the present case there is no evidence in defendant's offer of proof that any of the helicopters to which defendant's "experimental use" contentions pertain were built solely for experimental purposes.

For that reason alone, the *Ordinance* decisions are inapposite.

Defendant's reliance on the court's opinion in *Chesterfield*, *supra*, is likewise without merit. The court's statement in its opinion there that experimental use does not infringe constituted pure *obiter dictum*. The court's opinion specifically stated:

Where the court finds as a fact that the patent claims in suit are clearly invalid * * * it may not be necessary to consider the issue of infringement. 141 Ct. Cl. at 840.

The court's reference to experimental use was clearly unnecessary to the disposition reached in *Chesterfield*. It is also noted that in *Chesterfield* the defendant procured by purchase, not by manufacture by or for the Government, certain alloys which had been developed and used for supercharger buckets and blades. In *Chesterfield*, the claim arose from defendant's use of purchased alloys. In the present case, the infringing aircraft were clearly *manufactured* for the defendant.

Plaintiff has excluded from its present claim static test mechanisms manufactured for defendant. Numerous research and development contracts were entered into by the defendant and various manufacturers for the design, development and manufacture of experimental helicopters and none of those specific helicopters are the subject of this litigation.

Defendant urges the court to exclude from compensation any aircraft used by the defendant for testing, evaluation, demonstrational or experimental

purposes. Use for such purposes is used by or for the Government and is compensable. Obviously every new helicopter must be tested for lifting ability, for the effect of vibration on installed equipment, flight speed and range, engine efficiency, and numerous other factors. Tests, demonstrations, and experiments of such nature are intended uses of the infringing aircraft manufactured for the defendant and are in keeping with the legitimate business of the using agency. Experimental use is not a defense in the present litigation.

Defendant has also referred to the experimental use portion of Trial Judge Cooper's opinion and report to the court in *Douglas v. United States*, 181 USPQ 170 (1974). The court's opinion in that litigation, 206 Ct. Cl. 96, 510 F.2d 364, 184 USPQ 613 (1975), *cert. denied*, 423 U.S. 825, did not rule on experimental use since the patent claim was held to be invalid. While the trial judge's discussion of the experimental use rule in various courts is not the law of the case in *Douglas*, it is a well reasoned and historical analysis. In *Douglas*, the testing of the Kestrel aircraft conducted by the Army, Navy and Air Force, to evaluate the aircraft was found by the trial judge to be use of the aircraft which served a valuable governmental purpose.

Upon the foregoing opinion and on the findings of fact which are made part of the judgment herein, the court concludes that the plaintiff is entitled to recover from the United States in accordance with the opinion. Judgment is entered for plaintiff to that ef-

fect. The amount of recovery, including both the basic amount of compensation and the delay compensation, will be determined pursuant to Rule 131(c) under the opinion.

NICHOLS, *Judge* with whom KUNZIG, *Judge*, joins, concurring in the result:

I concur in the decision of the court and in the Per Curiam opinion except for part II, Royalty Compensation. As to that, I concur in the result, because I believe the Royalty Compensation should be at least as much as the conclusions stated in that part will lead to, and, indeed, considerably larger yet. The opinion is correct so far as it rejects the further cuts in Royalty Compensation proposed in Judge Kashiwa's dissent.

The court's decision will slash almost in half the trial judge's proposed decision, which would have awarded \$50,926,278, of which \$24,570,525 was the principal amount of reasonable and entire compensation, and the remainder was compensation in the nature of interest for delay in payment. The change serves to reward a cynical exploitation of the cost and delay of suing in this court, and its inevitable effect upon a claimant's valuation of his claim.

I would not quarrel with some reduction in the above figures, but I would make it for different reasons and to a lesser extent. It is normal in valuation proceedings to reject the testimony of retained experts on both sides and to award something in be-

tween. The trier of fact is not helpless if the testimony is all unacceptably high or low. *The Conqueror*, 166 U.S. 110, 131 (1897); *United States v. Northern Paiute Nation*, 183 Ct. Cl. 321, 346, 393 F.2d 786, 800 (1968). When we have fully in effect the utopia of court-appointed experts under the Federal Rules of Evidence, Rule 706, as adopted in Pub.L. 93-595, this kind of splitting of differences may become less respectable.

Here however, the court has rejected one error only to embrace another. The trial judge unfortunately held that the taking occurred all at once on the occasion of the first infringement by or on behalf of the Government. The court rightly holds that takings occurred from time to time over the years, as helicopters were built. But it wrongly holds that the 1947 royalty agreement with United Aircraft Corporation and the offers by plaintiff to other companies are binding on it, as admissions, and necessitate a royalty reduction to 2% from the trial judge's 3.85%.

After the end of World War II hostilities the wartime .85 rate lapsed though the Royalty Adjustment Act was, as the court admits, at least technically in effect. The Government apparently made no effort to rely on it; rather, it required indemnity agreements from suppliers. This relegated the plaintiff to making the best deal it could with manufacturers amid all the dog eat dog atmosphere of private patent controversy, but without the injunction relief normally available to wronged patentees, because the greater part of the sales were to be to the Government, and

the remedy by suit in this court under 28 U.S.C. § 1498 was exclusive. The general expectation was that after many years of costly litigation, some patents would be held valid and some invalid.

The court describes the two agreements with United Aircraft Corp. It professes to derive support for its position from the fact that United's letter, quoted in its fn. 11, was written a year after the 1947 agreement. However, the letter discussed and characterizes that 1947 agreement as purely and simply, on its side, a resultant of assessing the royalty plaintiff demanded against the projected outcome of litigation. No reason appears why the lapse of a year would make that assessment less valid. It is, in my view, a telling letter and vividly portrays the predicament that Autogiro was placed in. Plaintiff's situation was the same. This is why plaintiff cut its demands from 5% to 2%. If it had done this because its inventions were not salable, we would have a different case. It knew its inventions were not only salable but indispensable; that manufacturers could not build helicopters "around them," in the patent lawyers' term, *i.e.*, they could not build helicopters without infringement. It knew that whether manufacturers procured licenses or not, they would build helicopters in the same manner, infringing or not, and would defy any lawsuits that might be brought.

What is any claim worth, in present value, if one knows one must sue in the Court of Claims for 25 years to recover anything upon it? Is it fair to take the fellow who would settle it at the outset for 40¢

on the dollar, and assess his claim at 40¢, though he has not got the *quid pro quo* his sacrifice of 60¢ would have obtained if accepted?

Nobody ever actually paid any royalties at the 2% rate. Plaintiff would have obtained under its 1947 United agreement, if not superseded, and under its offers to others, if accepted, an immediate cash flow. It would also have obtained from anyone who accepted a license, an estoppel to challenge the patents, as the law was before *Lear Inc. v. Adkins*, 395 U.S. 653 (1969), which overruled *Automatic Radio Mfg. Co. v. Hazeltine Research Co.*, 339 U.S. 827 (1950). Most valuable of all, it would have saved 25 years of litigation. Plaintiff finally sold a paid up license at an even cheaper rate to United, to obtain these blessings. Defendant, and its indemnitors, did not furnish any of the *quid pro quo* that United furnished, and yet now they want the discount that United got. Even the court can see that the under 1% rate is not "reasonable and entire compensation" but somehow the 2% rate is different.

The court's decision not only violates the most elementary notions of reason and justice, but also established law. The general rule in eminent domain is that a landowner's right to recover just compensation may not be measured by the amount another landowner received as a settlement of possible litigation. 4 *Nichols On Eminent Domain*, (3d Ed. Rev. 1975), 12.3113 [2].

Calhoun v. United States, 197 Ct. Cl. 41, 453 F.2d 1385 (1972), does not require a different result, but

by implication indicates we should disregard the post-1946 transactions. In *Calhoun*, plaintiff licensed the patent throughout the industry at a rate of twenty-five cents per unit. The trial judge increased this commercial royalty by one-third since he felt the rate was set by plaintiff with a view to avoiding litigation and since defendant's failure to keep records increased plaintiff's costs in litigation. The court refused to accept the trial judge's figure because:

* * * There [was] nothing in the evidence to show or to suggest, that the 0.25 cent rate was set beneath fair market value with a view toward avoiding litigation. This license rate was used widely and offered freely to everyone; there were many "takers" at that price. * * * We must assume, in the absence of contrary evidence, that it represented full and fair market value, i.e., the going price. (197 Ct. Cl. at 56-57, 453 F. 2d at 1394).

Considering the casualties that patents suffer by invalidity determinations in the Federal Courts, a bargained license under any patent not yet litigated would possibly show some discount for litigation avoidance, but the teaching of *Calhoun* is that this mere surmise does not *per se* preclude use of a widely accepted commercial rate to establish reasonable and entire compensation. That is all *Calhoun* teaches to me.

The case before us is very different from *Calhoun*. There is conclusive evidence in the record that the parties considered the costs of litigation in negotiat-

ing the license agreements. There were not many "takers" of Autogiro's patents after 1946, only United. Further, post-1946 manufacture of helicopters was primarily for the Government, not commercial sales. We can properly infer from the record that the 1947 and 1949 agreements with United were not valid reflections of the patents' fair market value.

I agree with the remainder of the court's decision, as to which, therefore, I need not spell out my views. The amount the trial judge would have awarded is large, perhaps unprecedented. Even this court's meat axed award will be substantial. Large as the involved sums are, here, as always, the precedential effect of our decision is even more important. Do we really want to tell litigants that we have so little concern about the cost and delay of suing in this court, that we will take as the full value of a claim herein the discounted value which a desperate claimant must accept, if he is to realize anything at all before 25 years of litigation? If that is our position, we have a self-activating mechanism for reducing awards, which the defendant will know how to make the best use of. It is not my idea of justice.

Plaintiff's offers in 1947 do establish that the 5% royalty rate was abandoned. I would consider them to that extent. The situation appears to me to be appropriate for one of those mis-called "jury verdicts" (*cf. A. C. Ball Co v. United States*, 209 Ct. Cl. 223, 531 F. 2d 993 (1976)). I would come up with a \$20,000,000 figure for the royalties, to which

should be added the compensation for delay in payment.

As a parting shot, I will add I fail to see why this *Jarndyce v. Jarndyce* of a case has got to be further prolonged with Rule 131(c) proceedings. Could not the court, by a few minute's work with a pencil, calculate the amount of the award to which its reasoning leads, and convert this claim at long last into a money judgment?

SKELTON, *Judge*, concurring in part and dissenting in part:

I concur in all the per curiam opinion, except the award of interest of 6½ percent for the period 1966-1970 and the award of interest of 7½ percent for the period 1971 to date of payment. I think the interest awarded for these years is too high and should be reduced to six percent for the entire period of 1966 to date of payment. This would be in line with 16 U.S.C. § 79c(b)(2) (1970) which provides in pertinent part:

The United States will pay just compensation to the owner of any real property taken * * * including interest at the rate of 6 per centum per annum from the date of taking the property to the date of payment therefor; * * *

It is true that this statute refers to the taking of real property for the Redwood National Park, nevertheless, it deals with a fifth amendment taking of

property by the Government and provides the payment of an appropriate rate of interest.

Also, the Declaration of Taking Act, 40 U.S.C. § 258a (1970), 46 Stat. 1421, provides in pertinent part with reference to just compensation for a taking by the United States of any land or easement or right of way in land for public use:

* * * [A]nd the said judgment shall include, as part of the just compensation awarded, interest at the rate of 6 per centum per annum * * *.

These two statutes establish guidelines for the payment of interest in fifth amendment takings of real property by the United States. While the instant case does not involve real property, it does involve fifth amendment takings by the Government. I think that in the absence of adequate and convincing proof otherwise, we should follow the above statutes and award six percent interest for the above-indicated period.

In the case before us, the majority approves the decision of the trial judge in awarding 6½ and 7½ percent interest for the designated period based on Moody's Composite Index of Yields on Long Term Corporate Bonds. In my opinion, this is not a proper yardstick to measure or determine the amount of interest to be awarded in a fifth amendment taking by the Government. We are not dealing with corporate bonds, which may be speculative as to yield as well as to risk of default, but with an obligation of the United States which usually bears a lower interest

rate than that applicable to other borrowers, is not speculative as to yield and bears no risk of default.

The Ninth Circuit Court of Appeals discussed this very point in *United States v. Blankinship*, Nos. 75-1704 and 75-3722 (decided October 15, 1976), in considering the proper way to determine the amount of interest to be paid for a fifth amendment taking by the Government under the Declaration of Taking Act cited above. The court held:

However, we also hold that the trial court in this case, acting as the trier of fact, did not consider evidence we believe to be of great importance in establishing the proper and reasonable rate. Specifically, the trial court did not have before it certain highly relevant evidence with the result that the rates selected may have been improperly skewed. The evidence before it was inadequate to establish, the rate of interest that would have been available to the person from whom the property has been taken had he, at the date of taking, invested the total amount of any deficiency in the original deposit in a marketable public debt security issued by the United States Treasury having a duration commencing with the date of taking and ending with the deposit in the registry of the court of the entire deficiency with proper interest. Evidence tending to establish such a rate is necessary to fix fairly the just compensation to which the person deprived of his land is entitled. Without evidence of such a rate the rates selected very lightly may have been unduly influenced by rates

applicable to loans more speculative than one to the United States. * * *

* * * * *

* * * * [W]e are convinced that the proper interest rate applicable to an obligation of the United States may well be lower than that applicable to other borrowers. Moreover, this lower rate is particularly relevant here because the obligation to pay the deficiency is an obligation of the United States, a creditor whose obligation embodies no risk of default. Seizure of land under the Declaration of Taking Act is an act by the United States by which it substitutes for ownership of land, together with the risks attendant thereto, an obligation of the United States which is free of the risk of default. * * *

* * * We believe that the trial court should have focused more on that type of marketable public debt security which constitutes a direct obligation of the United States Treasury having a duration approximating the period during which the deficiency was unpaid. Data of this type appears in the *Treasury Bulletin*⁴ and the *Federal Reserve Bulletin*.

⁴ Of particular significance is the table setting forth "Yields of Treasury Securities" which appears regularly in the monthly Treasury Bulletin. *E.g.*, TREAS. BULL., July, 1976 at 79.

I agree with the decision of the Ninth Circuit Court in the above case. The method of determining the rate of interest in that case was not the procedure followed by our trial judge. It does not appear that there was any evidence at the trial of the yield of

public securities of the United States during the designated period. It is true that the defendant suggested at the trial that the interest rate should be "an amount equal to the average annual yields on a series of hypothetical long term Government bonds which defendant constructs subjectively." Of course, such a yardstick is speculative and is not the proper way to establish the correct interest rate.

It does not appear that there was any evidence at the trial showing the rate of interest that would have been available to the plaintiff if it had invested, on the dates of taking, the total amounts due it in marketable public debt securities issued by the United States Treasury during the periods involved here. Without such evidence, we are not justified in awarding interest of more than six percent as specified in the two statutes cited above.

The case of *Arcata National Corp. v. United States*, No. 771-71, report filed July 25, 1974, wherein the court approved interest of 6.6 percent in a taking case, is not applicable here, because the parties agreed to the 6.6 rate and the court merely approved their agreement. The majority agrees that this is true.

Neither is Pub. L. No. 93-625, § 7, 88 Stat. 2108 of January 3, 1975, providing for payment by the Government of interest of nine percent per annum on overpayments of internal revenue taxes, cited by the majority, controlling in this case. There is not the slightest evidence or indication that Congress intended the Act to apply in any way to eminent domain cases. Besides, there is a big difference between interest on

an overpayment of taxes and interest in a taking case. An overpayment of taxes allows the Government to use the taxpayer's money until a refund is made and the nine percent interest is payment by the Government for such use. Whereas, in a taking case, interest is not paid for use of money belonging to the party whose property is taken, but is awarded to him as a part of his damages in the form of delayed compensation.

KASHIWA, *Judge*, concurring in part and dissenting in part:

I concur with the views expressed in the majority opinion regarding: I. Similarity, III. Contribution, IV. Spare Parts, V. Delay Compensation and VI. Experimental Use. But with relation to the portion of the opinion entitled II. Royalty Compensation, I concur in part and dissent in part as hereinafter shown.

The majority found, relative to II. Royalty Compensation, that:

* * * Effective as of January 1, 1947, Autogiro entered into an agreement with United Aircraft Corporation for a royalty of \$500 an aircraft for 1946-1948, with the \$500 ceiling to change to 2% of the airframe price on and after January 1, 1949. After this United agreement was executed, the plaintiff proposed similar licenses to other major manufacturers of helicopters, in effect announcing its post-war rate to be 2%.

* * * [Footnote omitted] [At page 11.]

It is on these offers by plaintiff, made in 1947-1948, to other manufacturers of aircraft, mainly Piasecki, McDonnell and Bell, of licenses similar to that of United Aircraft Corporation's (United) license agreement effective January 1, 1947, that the majority decided on the post-war rate of 2%. A careful reading of the majority opinion shows that the opinion is not clear as to whether it meant that the 2% rate was only a maximum rate or whether the 2% rate was a flat rate with no downward, lower rate permitted. As to these offers, the majority states:

All this means that the post-1946 United agreement at 2% as well as the post-1946 offers made by Autogiro at that same level—plaintiff's own position deliberately taken in 1947 and 1948—have a *prima facie* title to acceptance as the reasonable royalty for 1946-1964. * * * [Emphasis supplied.] [At page 14.]

The phrase "*prima facie* title to acceptance" is ambiguous. The ambiguity is made more apparent when one reads the majority's footnote 16. It reads as follows:

"For the period before 1949, the 1947 United agreement provided that the royalty on any one aircraft should not exceed \$500, and also that from 1947 onward the minimum royalty per year should be \$10,000. *We consider these provisions of that agreement to be applicable in this case, though the only one that is likely to be operative is the \$500 ceiling for aircraft used by or manufactured for the defendant prior to January 1,*

1949. After January 1, 1949, the 2% rate applies. [Emphasis supplied.] [At page 15.]

The record in this case shows that United's \$500 ceiling per aircraft at that time amounted to a .66% rate.¹ A rate of .66% is only one-third of the 2% rate. Since the majority allows this lower rate of .66% for the 1947-1948 period, a careful reader of the opinion may conclude that the phrase "*prima facie* title of acceptance" is interpreted to mean that the 2% rate is only a maximum rate and so lower rates are permitted. But in the same paragraph to

¹ The 1947 United license agreement provided as follows:

"In respect of royalties accrued under the foregoing provisions of this Section within the three calendar years ending December 31, 1948, *the royalty on any one aircraft shall not exceed Five Hundred Dollars (\$500.)*. As to any such aircraft, if the royalty so paid by Licensee equals \$500., there need be no determination (for the purposes of this Section) as to which Patents of Autogiro are employed therein. For the calendar year 1946, the royalty as calculated under the foregoing provisions of this Section, on any aircraft made by Licensee and sold and delivered to and accepted by the Government in 1946 shall in no event exceed the royalty which would have been payable thereon had such aircraft been made, sold, delivered and accepted under the License Agreement between the parties dated as of the 24th day of March 1944." * * * [Emphasis supplied.] [At 10, section 5.]

By reason of the last sentence, some aircraft license payments only amounted to \$445.82 per aircraft (1946 for Navy aircraft). But the \$500 figure was the predominant measure used. The 2% rate provided in an earlier paragraph of the agreement was not used at all.

The .66% rate is computed by using a fraction, \$500 over \$75,212. The average cost per helicopter in 1948 was \$75,212. It is interesting to note that the wartime rate was .85%.

which footnote 16 aforequoted belongs, the majority again makes a broad, strong statement:

* * * The question remains whether the royalty should be set at a still lower figure, as defendant requests. This is not a simple skein to unravel, *but our conclusion is that the 2% rate should be accepted for all infringements.* The main reason is that, quite unlike the 2% figure, there is no indication from Autogiro that any lessor royalty was ever satisfactory, acceptable, or offered generally. [Emphasis supplied.] [At page 14.]

So one can only conclude that there is an inconsistency at this very important point of the majority opinion. This inconsistency caused the majority a problem in setting its post-1949 rate. The 1949 fully paid-up license to United was less than 2%. The majority answered defendant's argument for a lower than 2% rate for the post-1949 rate as follows:

* * * The patentee's situation was unusual in that the Government was the dominant consumer of the articles embodying the patents, and this put the plaintiff to a disadvantage since it was very unlikely that an injunction could be obtained against United (or other infringes). We therefore discount, in the absence of any expression of contentment, Autogiro's granting to United, at the latter's strong insistence, of a paid-up license in 1949. No offers to other companies, stemming from this paid-up license, were made by plaintiff. The theoretical constructions of defendant's expert—who reached a figure which

was only a fraction of 2%—were based in largest part on the paid-up license; *the expert did not consider plaintiff's hobbled position in trying to determine what the "parties might well have agreed upon"* (Saulnier v. United States, *supra*, 161 Ct. Cl. at 227 (1963)) *if Autogiro had been relatively free of this onesided litigation pressure.* * * * [Emphasis supplied. Footnotes omitted.] [At pp. 14-15.]

Since the majority first refers to dominant Government consumption, injunctions and one-sided litigation pressure, the majority was referring to Governmental actions under 35 U.S.C. §§ 89-96, popularly known at the Royalty Adjustment Act of 1942.² It

² 35 U.S.C. § 89 reads as follows:

"§ 89. *Adjustment of royalty rates; notice, remedies against licensee*

"To aid in the successful prosecution of the War, whenever an invention, whether patented or unpatented, shall be manufactured, used, sold, or otherwise disposed of for the United States, with license from the owner thereof or anyone having the right to grant licenses thereunder, and such license includes provisions for the payment of royalties the rates or amounts of which are believed to be unreasonable or excessive by the head of the department or agency of the Government which has ordered such manufacture, use, sale, or other disposition, the head of the department or agency of the Government concerned shall give written notice of such fact to the licensor and to the licensee. Within a reasonable time after the effective date of said notice, in no event less than ten days, the head of the department or agency of the Government concerned, shall by order fix and specify such rates or amounts of royalties, if any, as he shall determine are fair and just, taking into account the conditions of war-time production, and shall authorize the payment thereof by the licensee to the licensor on account of such manufacture,

use, sale, or other disposition: *Provided, however*, That the licensee or licensor, if he so requests within ten days from and after the effective date of said notice, may within thirty days from the date of such request present in writing or in person any facts or circumstances which may, in his opinion, have a bearing upon the rates or amounts of royalties, if any, to be determined, fixed and specified as aforesaid, and any order fixing and specifying the rates and amounts of royalties shall be issued within a reasonable time after such presentation. Such licensees shall not after the effective date of said notice pay to the licensor, nor charge directly or indirectly to the United States a royalty, if any, in excess of that specified in said order on account of such manufacture, use, sale, or other disposition. The licensor shall not have any remedy by way of suit, set-off, or other legal action against the licensee for the payment of any additional royalty remaining unpaid, or damages for breach of contract or otherwise, but such licensor's sole and exclusive remedy, except as to the recovery of royalties fixed in said order, shall be as provided in section 90 of this title. Written notice as provided herein shall be mailed to the last known address of the licensor and licensee and shall be effective upon receipt or five days after the mailing thereof, whichever date is the earlier. Oct. 31, 1942, c. 634, § 1, 56 Stat. 1013."

Section 90 mentioned above provides for suit by any licensor aggrieved by an order issued under section 89 in this court.

The majority in footnote 13 states:

"We refer to the fact that a patentee cannot obtain an injunction against a government-supplier or government-contractor and is confined, for his exclusive remedy, to a suit for 'reasonable and entire compensation' (i.e. monetary compensation) against the United States under 28 U.S.C. § 1498. These suits generally take a long time to come to their conclusion and the patentee, even if he prevails, normally obtains no compensation until the litigation is at an end. (The reference is not to the Royalty Adjustment Act, *see* note 12, *supra*.)"

The majority's emphasis is that "a patentee cannot obtain an injunction against a government-supplier or government contractor and is confined * * * to a suit * * * under 28 U.S.C. § 1498." The facts are undisputed that during pre-1949 and

is interesting to note that in 1948 this court decided that said sections 89-96 do not apply where there is "no license agreement with anyone for the payment of a royalty * * *." *Fulmer v. United States*, 111 Ct. Cl. 591, 593, 77 F.Supp. 927, 928 (1948). We have quoted section 89 fully in the margin to show that the mechanics of the Act call for royalties to be paid periodically. Where the royalty is paid in a lump sum, there is no royalty payment which the agency head may act upon to permit section 89 to operate. United's 1947 license expired as of the end of 1948 and since its post-1949 license was a fully paid-up license upon execution, no royalties were payable under any agreement. This court in *Fulmer v. United States*, *supra*, held:

Plaintiff has no cause of action under the terms of Royalty Adjustment Act of October 31, 1942 (35 U.S.C.A. 89-96), *Ivor B. Yassin v.*

post-1949 periods substantial non-governmental commercial sales were made by United. Commercial sales are clearly not covered by 28 U.S.C. § 1498. *Systron-Donner Corp. v. Palomar Scientific Corp.*, 289 F. Supp. 148 (1965). *Systron-Donner* was very similar to the present case in that both governmental and commercial sales were involved. The court held that 28 U.S.C. § 1498 had no application in a suit in a federal district court for patent infringement seeking the usual injunctive relief based on commercial sales only. So under the facts of this case, 28 U.S.C. § 1498 did not actually have the restriction preventing an injunctive suit as the majority feared. If the plaintiff was interested in an early decision regarding validity of plaintiff's patents by way of an injunctive suit, plaintiff could have immediately started an injunctive suit for patent infringement in a federal district court based on these commercial sales.

United States, 110 Ct. Cl. 211. Plaintiff had no license agreement with anyone for the payment of a royalty for the use of his alleged invention in connection with the manufacture of articles for the United States, and there could not, therefore, be an order by the head of a department or agency upon which that act conditions the right to sue. An allegation that defendant used plaintiff's unpatented device is not, therefore, sufficient to bring plaintiff's case within the terms of that Act. [Emphasis supplied.] [111 Ct. Cl. 593, 77 F. Supp. at 928.]

See, also, *Yassin v. United States*, 110 Ct. Cl. 211, 228 76 F. Supp. 509, 519, (1948). The exact date of the *Fulmer* decision was June 1, 1948, and *Yassin* was decided March 1, 1948. It is clear that plaintiff in 1949 drafted its fully paid-up license to United under the *Fulmer* holding of this court to free itself of any possible litigation under said 35 U.S.C. §§ 89-96. So plaintiff was not under the "one-sided litigation pressure" referred to by the majority. The 1949 paid-up license from plaintiff to United provided as total consideration the sum of \$325,000. Even if plaintiff had raised the amount from \$325,000 to \$5 million and United agreed to such raise, since it was a paid-up license it was not subject to the Royalty Adjustment Act. I shall hereafter again refer to the 1949 fully paid-up license under the damage computation aspects of this dissent.

So if the majority meant that the 2% rate was a flat rate "for all infringements" and that for the post-1949 years it was a flat 2% rate with no lower rate

permitted, I disagree. I agree with the defendant that the 1947-1948 offers only set a "maximum ceiling of 2%" and that a lower percentage rate figure was permissible. I take this position not only on my foregoing *Fulmer* rebuttal but on grounds more fundamental and basic which I shall next discuss.

The United license by plaintiff contained in addition to the 2% rate clause and others the following most-favored licensee clause:

Section 11. If, under similar circumstances and otherwise on substantially the same terms and conditions as this Agreement, a license shall hereafter be granted by Autogiro for the manufacture of man-carrying aircraft with sustaining rotors under all or substantially all the Patents of Autogiro at a royalty rate or rates lower than the corresponding rate or rates hereinabove provided, Autogiro will promptly notify Licensee of the grant of such license and *Licensee shall be entitled to the benefit of such lower rate or rates for its operations hereunder subsequent to such grant, * * ** [Referred to as the *most-favored licensee clause*.] [Emphasis supplied.]

The record shows that the only three other substantial manufacturers in the United States then in the field competing with United were Piasecki, McDonnell and Bell. The package license written outlines and/or drafts containing the 2% rate offer separately sent in 1947 and 1948 to Piasecki, McDonnell and Bell contained the identical above-mentioned most-favored licensee clause. The early Kellett license also contained the same clause. The 1943 and 1944

Firestone licenses extensively discussed in the trial judge's opinion in this case contained the same most-favored licensee clause. It is axiomatic that competitors must be dealt with fairly and equally and in all of its licensees and proposals plaintiff recognized this basic principle by using and making it known that it offered in its future license the most-favored license clause. Plaintiff well knew that Piasecki, McDonnell and Bell were competing with United in the helicopter market and that Piasecki, McDonnell and Bell would not agree to a license without the protection of the most-favored licensee clause. Plain elementary economics of marketing and the very evidence in this case prohibit any other assumption.

Defendant has taken a license by eminent domain in any applicable patent or patents from plaintiff by reason of the unauthorized making or use of the patented invention(s) in each aircraft at the time of Governmental acceptance or use of that aircraft. *Calhoun v. United States*, 197 Ct. Cl. 41, 453 F.2d 1385 (1972); *Regent Jack Mfg. Co. v. United States*, 167 Ct. Cl. 815, 337 F.2d 649 (1964). This license, under 28 U.S.C. § 1498, should be the equivalent of what the parties "might well have agreed upon," *Saulnier v. United States*, 161 Ct. Cl. 223, 227, 314 F.2d 950, 952 (1963), "or "[w]hat would the parties have taken and paid if the matter had come to an express agreement?" *Olsson v. United States*, 87 Ct. Cl. 642, 659, 25 F. Supp. 495, 499 (1938), quoting from *Wood v. United States*, 36 Ct. Cl. 418, 426 (1901). In order to make such a determination, the

court should "place [itself] in the position occupied by the contracting parties * * *." *Berdan Fire-Arms Mfg. Co. v. United States*, 26 Ct. Cl. 48, 80 (1890) (implied contract case cited with approval in *Olsson*, 87 Ct. Cl. at 659-660, 25 F. Supp. at 499). In the past when the court has done this, it has considered as one of the most important factors or "bargaining points" the general licensing practice in the particular industry and, more precisely, the patent holder's other arrangements with parties in a similar bargaining position as the litigants. *Richmond Screw Anchor Co. v. United States*, 67 Ct. Cl. 63, 72 (1929); *Breese Burners, Inc. v. United States*, 140 Ct. Cl. 9, 17-18 (1957). In the case before us plaintiff, by its own documents accompanying the 1947-1948 offers, included the most-favored licensee clause. Defendant relies not only on custom or practice in the industry but on the documents in evidence showing that plaintiff offered each competing manufacturer the most favored licensee clause. A stronger case could not have been shown by defendant.

The majority held with relation to the 2% offer that it was the market rate because "the significant fact is that plaintiff made the offer and made it widely." The most-favored license clause accompanied each of the 2% rate offers so if the offers of the 2% rate were "offered generally," the accompanying most-favored licensee clause was also "offered generally," sufficient to tie the two together. They together established a lower rate than the 2% rate if plaintiff offered a preferred rate to one of the manu-

facturers. The result was that although the 2% rate offer was made, plaintiff also offered a lesser rate to all substantial manufacturers where the facts showed that any one of the manufacturers was offered a preferred rate by plaintiff. The majority felt and stated that the lower than 2% rate problem is "not a simple skein to unravel" because it did not take the most-favored licensee clause into consideration. I believe that if the majority had considered the most-favored licensee clause and had made it a part of the 2% offer, the unraveling would have been easy and without difficulty.

The evidence is undisputed that United was offered preferred rates by plaintiff. Autogiro in 1947-1948 allowed United a preferred \$500 per aircraft advantage. We have heretofore discussed this 1947-1948 preference so I will not dwell on it again except to state that even without considering and taking into account the most-favored license clause, the majority felt that the \$500 advantage (.66% rate) given by plaintiff to United must also be given defendant on the total damage question posed by this phase of the litigation. The majority must have felt the unfairness resulting from a refusal to allow the .66% rate because it was plaintiff which granted this lower .66% rate and plaintiff must suffer the consequences of its offering such a low rate.

Plaintiff also entered into a written agreement in 1949 with United for a lesser rate than the 2% rate. The majority found:

* * * In 1949, after some months of negotiation triggered by United's disinclination to let the 2% rate go into effect, plaintiff granted United a paid-up license at considerably less than 2% per aircraft. * * * [At page 11.]

The paid-up license transaction in 1949 was initiated in 1948 with an offer by plaintiff to United to sell its entire patent holdings for \$750,000. This is an established fact in this case. I do not take this self-valuation by plaintiff of the total worth of its patents lightly just because it was only an offer. The offer finally ended by plaintiff granting a paid-up license in 1949 to United for \$325,000. I consider the \$750,000 offer highly prejudicial to plaintiff because of its connection to the \$325,000 transaction. A detailed analysis of the evidence relating to the transaction which started with the \$750,000 proposal by plaintiff shows that in a July, 1948, letter, United had expressed its firm conviction that a total of \$325,000 in royalties was the most that United and its licensee Nash, considered as a single licensee, should be expected to pay for a paid-up license under plaintiff's patent and that plaintiff should look to other licensees or its own manufacture for any additional value ascribed to the patents. United and its licensee Nash paid total royalties of \$136,477.98 for helicopter sales to the defendant under the wartime 1943 and 1944 package licenses. United also paid royalties for aircraft delivered by the end of 1948 under its 1947 package agreement of \$67,783.28, of which \$46,283.28 were royalties on sales to the Government.

Accordingly, plaintiff effectively accepted United's position in principle, for United paid the balance of the total sum of \$325,000, or \$120,738.74, in January, 1949, rather than spread it out over the three years 1949 to 1951, for a fully paid-up package license under all of plaintiff's 224 utility (including all 11 in suit) and three design patents then issued and under 52 pending applications. The arithmetic is exact and is as follows:

| | |
|--------------|------------------------------------|
| \$136,477.98 | Paid under 1943 and 1944 licenses. |
| + 67,783.28 | Paid under 1947 license. |
| <hr/> | |
| \$204,261.26 | |
| \$325,000.00 | Total price. |
| —204,261.26 | See above addition. |
| <hr/> | |
| \$120,738.74 | Difference. |

We quote the above arithmetic to show that the sale price of \$325,000 was not a figure picked out of the clear sky. The \$209,261.26 was based on past royalties paid under prior licenses of United. This prevents any argument by plaintiff of guessing on the part of defendant because the arithmetic is exact. The paid-up license cost United \$120,738.74. These breakdowns of figures are from plaintiff's own documents produced for the record in this case. It is important to observe the above arithmetic because, as it is hereafter shown, the defendant's expert found this analysis to be material in his opinion testimony in support of his views as to what the damages to plaintiff should be.

The majority, after unanimously rejecting the trial judge's single-taking theory, has in effect agreed with defendant that the 2% rate in the 1947 license to United and in plaintiff's offers to others in 1947-1948 is where this court should start. The majority in effect held that the material time frame was 1947-1948, when the offers were made. I agree with the majority.

The question now is what is the percentage below the 2% rate? When plaintiff's offers to all manufacturers are considered in the above time reference, one important factor, fundamental in market evaluation, looms above all the others. After United, the leader in the helicopter industry, had received its 1949 paid-up license, no other manufacturer could pay substantially more and expect to compete in either the Government or commercial market place. Those postwar arrangements, when properly compared and analyzed in light of the most-favored licensee clause, must operate under said clause to place a ceiling lower than the 2% rate on plaintiff's recovery. To view the case otherwise is simply to ignore the market value which plaintiff itself placed on a license under its patents.

When considering the merits of a proposed compensation scheme, it is often the practice to compare the recovery under that scheme to extrapolations from other agreements or transactions. Such comparisons give the court a guide to the comparative fairness of the scheme. *Saulnier v. United States*, 161 Ct. Cl. at 226-227, 314 F. 2d at 951-952.

In the period from 1947 to 1948, on an aircraft which cost basically \$75,000, United was paying a running royalty of \$500 per aircraft. Clearly, United felt that continuation of such a running royalty beyond 1949 was excessive. However, even if a similar running royalty was applied to the aircraft in this accounting, plaintiff's recovery would be far below the \$24 million awarded by the trial judge or even the \$12.8 million plaintiff would receive under its self-imposed 2% ceiling.

The average cost of the over 2,200 aircraft in this accounting is \$287,273. Applying to each of these aircraft a running royalty of basically the same level as under the 1947 United agreement, *i.e.*, $(\$287,273 \div \$75,000) \times \$500 = \$1,915$, the plaintiff would receive a basic royalty compensation of \$4,264,705. Clearly, this is more than United was willing to pay and, thus, is more than its competitors could reasonably afford to pay. However, this figure does demonstrate the unreasonableness of the \$12.8 million figure under the flat 2% rate ceiling.

Relative to the use of expert testimony, Congress, under sections dealing with patent litigation in 35 U.S.C. § 284 (1952), specifically provided as follows:

The court may receive expert testimony as an aid to the determination of damages or of what royalty would be reasonable under the circumstances.

And it is not only by statute but the Court as shown in *Sinclair Refining Co. v. Jenkins Petroleum Process Co.*, 289 U.S. 689 (1933), has encouraged reliance on

expert testimony. In patent litigation with relation to the use of expert testimony to aid the Court in assessment of damages, the Court in *Sinclair Refining Co.*, *supra* at 697-698, stated that even in cases where there are no actual sales, expert testimony may be allowed:

* * * A patent is a thing unique. There can be no contemporaneous sales to express the market value of an invention that derives from its novelty its patentable quality. Cf. *United States v. Swift & Co.*, 270 U.S. 124; *Todd v. Gamble*, 148 N.Y. 382; 42 N.E. 982. But the absence of market value does not mean that the offender shall go quit of liability altogether. The law will make the best appraisal that it can, summoning to its service whatever aids it can command. *United States v. Swift & Co.*, *supra*; *U.S. Frumentum Co. v. Lauhoff*, 216 Fed. 610; *Industrial & General Trust, Ltd. v. Tod*, 180 N.Y. 215, 232; 73 N.E. 7; *Sedgwick, Damages*, 9th ed., vol. 1, pp. 491, 504. At times the only evidence available may be that supplied by testimony of experts as to the state of the art, the character of the improvement, and the probable increase of efficiency or saving of expense. *Dowagiac Mfg. Co. v. Minnesota Moline Plow Co.*, 235 U.S. 641, 648, 649; *Suffolk Co. v. Hayden*, 3 Wall. 315, 320; *U.S. Frumentum Co. v. Lauhoff*, *supra*. * * *

Fortunately, in this case there was an admitted, fully paid-up sale of patent rights by plaintiff to United. The use of the expert by defendant herein was not to establish the sale. His testimony was an analysis of

the admitted sale by plaintiff. This is a much stronger case for expert testimony than in *Sinclair Refining Co.* and the evidence in this case is on much firmer ground than what this court had to rely on in *Saulnier v. United States, supra*. In ascertaining damages resulting from defendant's use of aircraft canopy assembly patents owned by plaintiff, this court said in *Saulnier*:

Of course, the best guide for the determination of just compensation are the royalties agreed upon between the patentee and licensees in arm-length transactions. Unfortunately, there are no commercial licensees in this case, but the settlement between plaintiff and the British Government does establish a guide. This was negotiated after the war was over. Great Britain was a government foreign to plaintiff, who was a Frenchman. Negotiations lasted over a period of 18 months. A price was agreed upon of \$14 per plane for from 26,000 to 27,000 planes, a total consideration of 99,090 British pounds. At the then rate of exchange, this amounts to \$376,542. [161 Ct. Cl. at 226, 314 F.2d at 952.]

In other words, the use of expert witnesses is encouraged in this field and much discretion is allowed the courts in the use of these experts. In this case we had the benefit of a true expert witness, Mr. Glassman (defendant's chief witness), and the 1949 fully paid-up license.

With relation to expert testimony introduced by the parties in this case, it appears that the plaintiff submitted expert testimony to prove its claim for

damages under its single-taking theory. The evidence plaintiff produced was relevant under the Firestone Tire and Rubber Company license. The facts and theory involved in plaintiff's approach did not fit into or answer defendant's entirely separate and different approach. Defendant brought forward Mr. Glassman as its expert witness to offer expert testimony in support of its computation of plaintiff's damages based on facts surrounding the United licenses of 1947 and 1949. It happens that as the case now turns out, we have uniformly rejected plaintiff's single-taking approach and plaintiff is without evidence to rebut Mr. Glassman's opinion evidence. Plaintiff in its brief before this court, answering Mr. Glassman's expert testimony, does not point to any expert testimony produced by plaintiff to refute Mr. Glassman's expert testimony. Mr. Glassman's opinion testimony remains uncontroverted. It cannot be refuted because it is plain arithmetic based on figures in the record.

Mr. Glassman has the following qualifications. He possesses both a law degree and an engineering degree. He worked in the Patent Office for about four years, mostly as a Patent Examiner, and thereafter was employed by the Department of the Army in the Office of the Chief Signal Officer and later, after an Army reorganization, in the Army Materiel Command, performing patent work for the Army from 1945 for about 27 or so years. During the time when he was working in the Office of the Chief Signal Officer and, for part of the time, in the Army Materiel Command in connection with investigation of infringe-

ment claims and offers of licenses, he personally negotiated on behalf of the Government some 15 to 20 license agreements or settlements of infringement claims. He also reviewed about 1,000 proposed license agreements between United States companies and foreign companies pertaining to the export of data relating to munitions of war under State Department Export Control Regulations, which often involved the transfer of patent or data rights. Mr. Glassman also had responsibility for determining or investigating the propriety of royalty charges to Army contracts involving companies, including those in the aircraft industry such as Lockheed, Boeing-Vertol, and Hughes. He has previously given testimony in four other patent accounting cases to determine reasonable royalty rates in the Court of Claims. I am impressed by his qualifications. These qualifications are substantial when compared to the qualifications of plaintiff's witnesses. Plaintiff's chief expert witness, H. F. Gregory, testified regarding damages on a patent-to-patent basis. It is clearly not relevant under the present status of the case. It is interesting to note that he didn't know what a "file wrapper" was. He had no prior experience in patent procurement.

Mr. Glassman used the methodology and calculations shown in the margin.^a Clearly, Mr. Glassman's

^a Mr. Glassman stated that royalty compensation in this case rests on:

(1) extrapolations from the 1947 and 1949 license agreements with United and royalty payments made thereunder.

(2) United's sales of helicopters actually delivered in the period from the first unauthorized use for which compensa-

tion is sought in this case (December 27, 1946) to December 31, 1948, and

(3) projected sales which plaintiff might reasonably anticipate for United from January 1, 1949, to the end of the accounting period in this case (May 27, 1964).

The 1947 license is the running royalty type, while the 1949 license is the paid-up type. Consequently, certain assumptions have to be attributed to plaintiff in negotiating the 1949 agreement in order to make extrapolations from both agreements. Mr. Glassman's approach was to take the facts known to the plaintiff in late 1948 and early 1949, including the two United agreements, and what the plaintiff might reasonably anticipate for helicopter orders for United after 1948 and arrive at a royalty rate that would be applicable to the accused helicopters purchased by the defendant in the period December 27, 1946, to May 27, 1964. So what are the facts that were known by the plaintiff during this period?

A. *The Facts*

1. In mid-October, 1948, the plaintiff's president knew that:

(a) United had received during fiscal year 1948 orders from the defendant for 85 helicopters at a total price of \$6,393,000, an average of \$75,212 per helicopter.

(b) United had received from July 1, 1948, to October 13, 1948, a period of .285 years, orders from the defendant for 37 helicopters for an unknown price.

(c) Accordingly, the plaintiff knew that 122 helicopters had been ordered by the defendant in the two periods (1,285 years).

2. The plaintiff's president knew in January, 1949, that during calendar year 1947, United had sold 22 helicopters to the commercial market for approximately \$1,150,000 and during calendar year 1948 had sold 16 helicopters to that market for approximately \$1,120,000, an average of 19 helicopters per year.

3. The plaintiff's president also knew in January, 1949, that:

(a) For the calendar years 1947 and 1948, United had paid the plaintiff a total of \$63,500 in royalties under the

January 1, 1947, license on 127 helicopters *delivered* during that period. No royalties were paid for the period December 27-31, 1946.

(b) United had stated in a letter dated July 27, 1948, to plaintiff that modifications would have to be made in the January 1, 1947, license if it were to continue.

(c) On January 7, 1949, United and the plaintiff entered into a paid-up license, effective January 1, 1949, covering commercial and military helicopters for the sum of \$120,738.74.

B. Assumptions of Witness

1. Since the known average cost per helicopter of 85 defendant helicopters referred to in A.1.(a) above was \$75,212, he assumed that the cost figure would remain constant throughout the accounting period and that the number of helicopters procured by the defendant each year from United would remain constant (122 helicopters per 1.285 years, or approximately 95 helicopters per year). (In calculating an effective royalty rate, the assumption that the cost per helicopter remained constant works to the advantage of the plaintiff where the cost per helicopter *actually rose* in future years. This is due to the fact that the higher the projected procurement in C.3 below, the larger the denominator in C.7 and, accordingly, the smaller the royalty rate.) Over the entire accounting period of almost 17.5 years, the defendant actually procured 2,227 helicopters from contractors other than United, an average of 127 per year. 2. Since United sold 22 helicopters to the commercial market in 1947 and 16 in 1948, for an average of 19 per year, he assumed that United would sell 19 helicopters per year to the commercial market during the remainder of the accounting period (January 1, 1949-May 27, 1964) and that the unit price would remain the same as the unit price to the defendant, i.e., \$75,212.

C. The Calculations of Witness

1. The periods referred to in A.1 (a) and (b) above, during which the defendant ordered 122 (85+37) helicopters from United, total 1.285 years.

2. The accounting period in this case is 17.5 years and extends from December 27, 1946, to May 27, 1964. This period includes 15.403 years that fall within the January 1, 1949, paid-up license with United.

3. Projected Sales by United to Defendant and Commercial Markets—January 1, 1949-May 27, 1964.

(a) Defendant

(1) (average number per year from A.1(c)) \times (number of years) = total number of helicopters from January 1, 1949, to May 27, 1964); $(122 \div 1.285) \times 15.403 = 1,462$.

(2) (total number in period) \times (assumed price per helicopter) = (dollar sales); $1,462 \times \$75,212 = \$109,960,000$ (rounded off to the nearest \$10,000).

(b) Commercial

(1) (average number per year from A.2) \times (number of years) = (total number of helicopters from January 1, 1949, to May 27, 1964); $19 \times 15.403 = 293$.

(2) (total number in period) \times (assumed price per helicopter) = (dollar sales); $293 \times \$75,212 = \$22,040,000$ (rounded off to nearest \$10,000).

(c) Total, (a) + (b) = \$132,000,000

4. Actual Sales by United in the Period December 27, 1946, to December 31, 1948.

(a) Defendant

(1946—December 27-31 only) $(0 + (1947) \$1,884,677 + (1948) \$5,287,175 = \$7,171,852$.

(b) Commercial

(1946)—December 27-31 only) $0 + (1947) \$1,510,000 + (1948) \$1,120,000 = \$2,630,000$.

5. Total United States (actual and projected)—December 27, 1946, to May 27, 1964

| | |
|-----------------|---------------|
| From 3(c) | \$132,000,000 |
| From 4(a) | 7,171,852 |
| From 4(b) | 2,630,000 |

\$141,801,852

6. Total Royalties Paid by United to Plaintiff

| | |
|--|-------------|
| 1946 (December 27-31, 1946) | 0.00 |
| 1947 and 1948 | \$63,500.00 |
| January 1, 1949, to May 27, 1964 | 120,738.74 |

\$184,238.74

analysis was soundly based. Plaintiff is certainly due no compensation more than 0.1299% of the trial judge's prices for the 2,227 aircraft involved in this accounting of \$639,243,969, or the sum of \$830,377.92, paid up as of January 1, 1949.⁴ I am of the view that there should be entry of judgment in favor of plaintiff and against defendant of \$830,500 together with \$1,326,723.75 as interest, computed as of January 1, 1949 to the end of 1976, under the rates mentioned in IV. Delay Compensation of the majority opinion. The total judgment in my view in favor of plaintiff and against defendant should be \$2,157,223.75. There is no necessity of delaying this case any further.

BENNETT, *Judge*, concurring in part and dissenting in part:

Though I join in most of the court's opinion, I cannot accept the majority's reasoning in part II (Royalty Compensation) in support of the 2-percent royalty rate. Rather, I basically agree with Judge

$$\begin{array}{l}
 \text{7. Royalty Rate} \\
 \frac{(\text{Total Royalties})}{(\text{Total Sales})} \times 100\% = (\text{Effective Royalty Rate}) \\
 \frac{184,238.74}{141,801,852} = .1299\%
 \end{array}$$

⁴ This figure is obtained by multiplying \$639,243,969 by .1299%, which is \$830,377.92. I recommend an even number of \$830,500. The \$639,243,969 was the trial judge's total for the 2,227 aircraft involved in this accounting.

Kashiwa's approach to that issue, and concur in his result. Like Judge Kashiwa, I find an unexplained, telling inconsistency between the majority's approval of the 2-percent rate for license compensation from 1946 onward, and its recognition that a \$500-per-aircraft figure governed plaintiff's license agreement with United in 1947 and 1948. Even more undermining of the 2-percent rate is the fact that it was never actually used to measure a fair return to plaintiff on its patents; that rate was neither accepted by any other potential licensees nor allowed to go into effect under the 1947 United license agreement. The 2-percent figure may well have been satisfactory to plaintiff, but then so was the \$500-per-craft rate, and so further, as Judge Kashiwa demonstrates, was the return received under the 1949 paid-up license. Accordingly, there is no warrant for the majority's conclusion that a 2-percent compensation level should apply on the theory that no "lesser royalty was ever satisfactory, acceptable, or offered generally." Following Judge Kashiwa, I think that the 1949 paid-up license agreement was not so clearly the product of "one-sided litigation pressure," the assumption used by the majority to brush aside evidence that could lead to a more than tenfold reduction in plaintiff's recovery. That agreement should be taken into account, in keeping with the economic reality embodied in the most favored licensee" clause of the typical royalty agreement that plaintiff offered to potential licensees. As Judge Kashiwa explains, "[a]fter United, the leader in the helicopter industry, had re-

ceived its 1949 paid-up license, no other manufacturer could pay substantially more and expect to compete in either the Government or commercial market place." Defendant is unquestionably entitled, as a matter of law as well as by analogy to the "most favorable licensee" provision, to enjoy a royalty rate no less favorable than any of plaintiff's licensees. The impact of the paid-up license was carefully and properly considered in the unrebutted testimony of defendant's expert witness Glassman, reaching a just compensation rate far less than 2 percent and more in line with that stated in Judge Kashiwa's opinion.

APPENDIX C

IN THE UNITED STATES COURT OF CLAIMS

No. 50328

[Filed Mar. 4, 1977]

STEPHEN PITCAIRN, AGENT (SUBSTITUTED FOR
AUTOGIRO COMPANY OF AMERICA)¹

v.

THE UNITED STATES

J. Edward Shinn, attorney of record for plaintiff.

B. Frederick Buchan, Jr. and *Thomas J. Scott*, with whom was *Assistant Attorney General Rex E. Lee*, for defendant.

Before DAVIS, *Judge*, Presiding, COWEN, *Senior Judge*, SKELTON, NICHOLS, KASHIWA, KUNZIG and BENNETT, *Judges, en banc*.

This case comes before the court on defendant's motion for rehearing and plaintiff's response; plaintiff's motion for leave to file a response, and plaintiff's response to defendant's reply to plaintiff's motion for rehearing, etc.; defendant's motion for leave to file its second motion for rehearing; defendant's

second motion for rehearing; and plaintiff's response to defendant's motion for leave to file its second motion for rehearing and to defendant's second motion for rehearing. These various matters have been considered *en banc* and without oral argument. They are disposed of as follows:

1. Plaintiff's motion for rehearing is granted to the following extent and is otherwise denied:

(a). On page 11 of the slip opinion, second sentence, delete "of the airframe price" and substitute "of the total retail sale value (including engine and standard equipment)."

(b). In finding 467, last paragraph (as added by the court), third and seventh sentences, in both places delete "of the airframe price" and substitute "of the total retail sale value (including engine and standard equipment)."

(c). As provided in the original *per curiam* opinion the case remains remanded to the Trial Division for the computation of the precise amount of recovery, but we emphasize that, insofar as the basic compensation is concerned,¹ the court feels that no further evidence or testimony is necessary but that the amount can be calculated from the court's opinion and findings, taken together with the material (except for the royalty-percentages and resulting mone-

¹ Evidence may possibly but not necessarily be called for with respect to the appropriate rate of delay compensation in 1976 and 1977.

tary figures) in Judge Lane's findings with respect to "Royalty Bases" (Judge Lane's findings 475-516).²

(d). The trial judge to whom the case is assigned is directed to determine the amount of recovery as expeditiously as possible, and he may, in his discretion, call upon the parties for the written submissions suggested in paragraph B of plaintiff's motion for rehearing—or any other submissions or procedures the trial judge deems helpful in the expeditious computation of the amount of recovery.

(e). With respect to "Spare Parts" and "Experimental Use", the court deems those matters fully determined by Parts IV and VI, respectively, of its *per curiam* opinion.

2. Plaintiff's motion for leave to file a response to defendant's reply to plaintiff's motion for rehearing is granted and has been considered.

3. Defendant's first motion for rehearing is denied.

4. Defendant's motion for leave to file its second motion for rehearing is granted.

5. Defendant's second motion for rehearing is denied except that, in the paragraph of the *per curiam* opinion beginning on page 20 and ending on page 21, the second sentence is deleted in full, and the present third and fourth sentences are modified to read as follows: "But plaintiff did not include attorneys' fees in his requested reasonable and entire compensation before the trial judge, and no determination with

² The court did not adopt those findings because many of them incorporated Judge Lane's determination of the reasonable royalty which differed from that the court determined.

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respect to attorneys' fees, witness fees and expenses is called for from the court."

IT IS SO ORDERED.

BY THE COURT

/s/ Oscar H. Davis
OSCAR H. DAVIS
Judge, Presiding

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APPENDIX D

IN THE UNITED STATES COURT OF CLAIMS

[Filed Jul. 12, 1977]

STEPHEN PITCAIRN, AGENT (SUBSTITUTED FOR
AUTOGIRO COMPANY OF AMERICA)

v.

THE UNITED STATES

J. Edward Shinn, attorney of record, for plaintiff.
William P. Cole, of counsel.

B. Frederick Buchan, Jr. and *Thomas J. Scott, Jr.*, with whom was *Assistant Attorney General Barbara Allen Babcock*, for defendant. *Joseph A. Hill* and *Vito J. DiPietro*, of counsel.

Before DAVIS, *Acting Chief Judge*, COWEN, *Senior Judge*, NICHOLS, KASHIWA and BENNETT, *Judges*.

ORDER

This case comes before the court on defendant's exception, filed July 8, 1977, to the memorandum report on computation of amount of recovery, filed June 24, 1977, by Trial Judge Francis C. Browne, pursuant to the court's order of June 21, 1977, and

the trial judge's order, filed June 29, 1977, correcting the said memorandum report. Upon consideration thereof, together with plaintiff's response in opposition thereto, without oral argument, since the court agrees with the trial judge's memorandum, findings, and conclusion of law, filed June 24, 1977, as corrected and revised by his memorandum order, filed June 29, 1977, copies of which have been furnished to the parties, it hereby affirms and adopts the trial judge's memorandum and computation, as corrected and revised, as the basis for its judgment in this case.

IT IS THEREFORE CONCLUDED AND ORDERED that plaintiff is entitled to judgment, as reasonable and entire compensation for defendant's taking of plaintiff's patent rights, and judgment is hereby entered for plaintiff against defendant, in the basic amount of fourteen million, four hundred and forty thousand, seven hundred and seventy-two dollars (\$14,440,772), plus sixteen million nine hundred and eighty-two thousand, three hundred and sixty-two dollars (\$16,982,362) delay compensation up to and including June 30, 1977, for a total of thirty-one million, four hundred and twenty-three thousand, one hundred and thirty-four dollars (\$31,423,134), plus further delay compensation to be computed on fourteen million, four hundred and forty thousand, seven hundred and seventy-two dollars (\$14,440,772) at a delay compensation rate of 7.5 percent per annum (\$2,967.25 per day) from July

1, 1977 to and including the date of payment of the judgment.

BY THE COURT

/s/ Oscar H. Davis
OSCAR H. DAVIS
Acting Chief Judge